CHAPTER III

COMPLIANCE AUDIT

Important audit findings that emerged from the test check of transactions of the Departments of the Government of Gujarat are included in this Chapter.

NARMADA, WATER RESOURCES, WATER SUPPLY AND KALPSAR DEPARTMENT

3.1 Construction of High Level Canals

3.1.1 Introduction

The irrigation projects are normally designed as gravity bed scheme in which contours in the terrain are used to deliver the water to the envisaged command areas through gravity. However, for providing irrigation to the hilly/ uneven terrain and its surrounding areas located above the existing canal bed level (CBL) of any of the gravity bed scheme, a high level canal (HLC) is required to be constructed on such terrain. The water is fed into the HLC either from an off take point originating at a higher altitude of the dam/ canal or is pumped from the already existing canal constructed under the gravity bed scheme.

For providing irrigation to 34,100 hectare (ha) in 195 villages located in the hilly/ uneven terrain and its surrounding areas located above the existing CBL, the Water Resources Department (the Department) decided (between August 1997 and April 2008) to construct HLCs *i.e.*, Kadana Left Bank High Level Canal (KLBHLC), Panam High Level Canal (PHLC), Ukai Left Bank High Level Canal (ULBHLC) and Karjan Left Bank High Level Canal (Karjan LBHLC) at a cost of ₹ 238.14 crore **(Appendix IV)**. The projects were decided to be completed between December 2005 and March 2015. The total cost of the PHLC and ULBHLC projects stands revised from original ₹ 185.86 crore to ₹ 400.13 crore. The project cost for all projects now stands at ₹ 452.41 crore (March 2015).

Due to delay in commencement, non-preparation of detailed project report (DPR)/ incomplete DPR, defective survey, slow progress of works *etc.*, all projects remain incomplete after incurring an expenditure of ₹ 402.52 crore as of March 2015. The project wise details are shown in **Appendix IV**.

3.1.2 Scope and coverage of audit

These four projects were implemented under the administrative control of two Chief Engineers[1] and execution of works was carried out through

[1] CE & Additional Secretary (South Gujarat) and CE & Additional Secretary (Central Gujarat).

five Divisions[2] under the supervision and monitoring control of four Superintending Engineers (SE).

We examined the records of three out of four projects *viz.*, KLBHLC, PHLC and ULBHLC selected considering the investment made for the projects totaling to ₹ 399.26 crore with a view to see the efficacy with which Government orders, provisions of the Gujarat Public Works Manual and other general conditions of the contract were being implemented by the Department. We conducted audit in four Divisions[3] between March 2015 and April 2015 covering detailed scrutiny of 32 works involving tendered cost of ₹ 158.32 crore awarded by the Divisions as shown in **Table 1** below:

Table 1: Population and Selection of work

Name of project	Total works awarded/ spillover during 2011-12 to 2014-15		Works selected for detailed scrutiny			
			Works awarded during 2011-12 to 2014-15		Works Spillover prior to 2011-12	
	No. of works	Tendered cost	No. of works	Tendered cost (₹ in crore)	No. of works	Tendered cost (₹ in crore)
KLBHLC	8	27.46	0	0	4	27.12
PHLC	27	88.87	9	22.17	5	70.42
ULBHLC	35	54.06	9	11.03	5	27.58
Total	**70**	**170.39**	**18**	**33.20**	**14**	**125.12**

Of the selected 32 works, 18 works were completed between August 2009 and November 2014 at a cost of ₹ 129 crore. The remaining 14 works were incomplete after incurring an expenditure of ₹ 40.87 crore (April 2015).

3.1.3 Audit findings

The details of HLC projects are given in **Table 2** below:

Table 2: Project wise expenditure and CCA utilised

Sl. No.	HLC Project	Year of project	Project cost (₹ in crore)	Expenditure up to March 2015 (₹ in crore)	CCA planned (in Ha)	CCA created (in Ha)	CCA utilised (in Ha)
1	KLBHLC	2004	47.79	54.74	5,000	3,706	1,261
2	PHLC	1999	240.52	219.69	18,000	4,070	1,700
3	ULBHLC	1997	159.61	124.83	9,900	3,700	400
4.	Karjan	2008	4.49	3.26	1,200	0	0
Total			**452.41**	**402.52**	**34,100**	**11,476**	**3,361**

The general as well as project wise audit observations have been discussed in the succeeding paragraphs.

3.1.4 Planning

A Detailed Project Report (DPR) showing the project components with milestone and timeframe for proper implementation of the project works is

[2] Executive Engineer (EE), Ukai Division-1, Ukai, EE, VER-II Project Division, Vyara, EE, Irrigation Project Division No. IV, Rajpipla, EE, Kadana Division-I, Diwada Colony and EE, Panam Project Division, Godhra.

[3] Executive Engineer (EE), Kadana Division-I, Diwada Colony, EE, Panam Project Division, Godhra. EE, Ukai Division-1, Ukai and EE, VER-II Project Division, Vyara.

required to be prepared. Further, the DPR facilitates effective monitoring and controlling of the project activities to achieve the envisaged objectives within the targeted timeframe.

We observed that:

- The DPR for KLBHLC project was prepared (October 2004) by the Department stipulating project completion by December 2005.
- The DPR for PHLC was approved (April 1999) by the Department. However, it did not show envisaged period of completion of the project. But for availing the loan from National Bank for Agriculture and Rural Development (NABARD), the Department proposed to complete the project by March 2008 which was also subsequently revised to March 2011.
- The DPRs for ULBHLC and Karjan HLC were not prepared by the Department.

Thus, non-preparation/ deficiencies in preparation of the DPRs led to ineffective monitoring of project activities. Consequently, the projects were not completed in time bound manner.

3.1.5 Financial management

The details of budget estimate (BE), grant released and expenditure incurred during the period from 2011-12 to 2014-15 in four projects are given in **Table 3.**

Table 3: Details of budget provision, grant released and expenditure incurred

(₹ in crore)

Year	KLBHLC			PHLC			ULBHLC			Karjan HLC		
	BE	Grant released	Expenditure	BE	Grant released	Expenditure	BE	Grant released	Expenditure	BE	Grant released	Expenditure
Up to 2010-11	--	--	47.78	--	--	147.98	--	--	75.64	--	--	--
2011-12	5.00	3.00	2.94	34.00	15.00	14.69	13.00	15.50	15.50	8.50	0.41	0.40
2012-13	2.00	1.30	1.29	27.00	23.00	23.01	14.00	17.00	16.57	4.00	1.37	0.45
2013-14	3.00	2.31	2.31	17.00	23.00	22.82	7.71	10.87	10.51	2.50	3.15	0.86
2014-15	1.85	0.42	0.42	12.00	12.00	11.19	7.11	7.11	6.61	5.25	1.55	1.55
Total			**54.74**			**219.69**			**124.83**			**3.26**

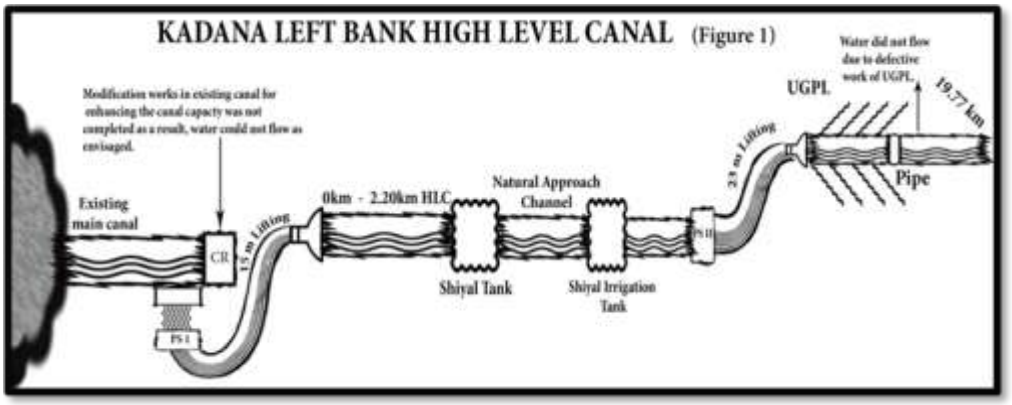
The cost of KLBHLC and ULBHLC was met from budget. In case of PHLC in addition to the Budgeted Grant, 90 *per cent* of the project cost was met from NABARD loan[4]. We observed that though sufficient funds were allotted in all projects, due to slow progress of main canals and distributaries works, funds could not be utilised. A loan of ₹ 215.53 crore for PHLC project was sanctioned in different tranches (October 2005 and September 2011) by NABARD in Phase I (₹ 118.15 crore) and Phase II (₹ 97.38 crore).

[4] Loan under Rural Infrastructure Development Fund.

3.1.6 Kadana Left Bank High Level Canal (KLBHLC)

The Canal Bed Level (CBL) of the existing main canal of Kadana Water Reservoir Project (WRP) was 110.07 m and therefore, water could not be supplied to hilly areas. The State Government planned (May 2004) to construct KLBHLC with CBL at 137.65 m and decided to lift water from existing main canal up to a height of 27.58 m by constructing pumping stations to flow water into the HLC for providing irrigation facilities to 5,000 ha of land in hilly area. The project envisaged construction of 19.77 km long main HLC to flow water by 150 cubic feet per second (cusecs) capacity. The project was approved in May 2004 and was to complete by December 2005. The Executive Engineer, Kadana Division-I, Diwada Colony was in charge of execution of the project.

The components of the KLBHLC are shown in **Figure 1** below.



Component of the project

The project had three main components:

- Modification of existing main canal as discussed in **Paragraph 3.1.6.1**.
- HLC of 19.77 km with pumping stations which was completed in December 2009.
- Distribution network of 21 minors as discussed in **Paragraph 3.1.6.2**.

The work wise details of the project are shown in **Table 4** below**:**

Table 4: Work wise details of the KLBHLC project as on 31 July 2015

Components of the project	Length		Awarded cost (₹ in crore)	Completion cost (₹ in crore)	Period of		
	Tendered	Actually completed			Award of works	Stipulated completion	Completion of works
Modification of existing main canal	12.50 km	10 km	4.02	2.77	April 2005	August 2005	Not completed
Structures of existing main canal	12 nos.	6 nos.	0.80	0.45	April 2005	August 2005	In progress
LBHLC	19.77 km	19.77 km	6.21	5.69	April 2005 to June 2005	March 2006 to May 2006	June 2006 to December 2009
Pumping Stations	2 nos.	2 nos.	15.74	15.66	May 2007	May 2008	December 2010
14 Minors by UGPL-Phase-I	30.80 km	30.80 km	6.63	7.96	February 2009	February 2010	April 2010
7 minors in Phase-II	34.25 km		Not started				

3.1.6.1 Modification of existing main canal and structures

The water was to be lifted from the existing main canal into the HLC. For this purpose, the existing capacity of 390 cusecs of the main canal was required to be enhanced to 540 cusecs to cater to the 150 cusecs requirement of HLC. Unless this is done, the HLC would not get sufficient quantity of water required to irrigate 5,000 ha. Accordingly, the work of excavation, earth work and lining of existing main canal was awarded (April 2005) with stipulated completion by August 2005. The contractor could not complete the work within the stipulated time limit due to wet condition of canal, rainy seasons, scarcity of labour and materials and release of water in canal for Kharif crops. Therefore, Department had granted (July 2006) extension of time up to July 2007. After executing work valued ₹ 2.77 crore, the contractor stopped (January 2007) the work leaving unexecuted work in scattered length of 2.5 km without assigning any reasons. Finally, the contract was terminated (October 2013) by the Division.

We observed that though the work was abandoned by the contractor in January 2007, the Division did not take an early action to terminate the contract and invite fresh tenders to complete the work. Instead, the Division issued notices between March 2006 and October 2010. Thereafter, as evident from the records of the Division, no action was taken by the Division during three years. The contract was finally terminated in October 2013. It was also observed that even after two years from termination of the contract (September 2015), Division did not take any action to complete the remaining work.

Similarly, the work of construction of 12 structures[5] was awarded (April 2005) with stipulated completion by August 2005. As the progress of work was very slow, the Division issued six notices to the contractor between December 2006 and May 2008. The contractor did not mobilise required machinery and manpower for work. After completion of five[6] out of 12 structures the contractor requested (May 2008) to relieve him from the work on the plea that the Division had not supplied drawings, scarcity of cement and resistance by the farmers. The Division did not relieve the contractor or terminate the contract (July 2015) for which no reasons were found on records. Meanwhile, one structure[7] was awarded (July 2008) to another contractor and got completed in November 2010. The work of remaining six structures has not been taken up (June 2015).

Thus, due to lack of proper monitoring and deficient action by the Division in completion of modification and structures works in existing main canal, it was

[5] (1) Village Road Bridge (VRB) at chainage 1,179 m, (2) VRB at chainage 3,750 m, (3) VRB at chainage 5,600 m, (4) Canal Syphon at chainage 7,159 m, (5) Super passage at chainage 8,012.50 m, (6) Canal escape & CR (cross regulator) gate/ VRB at chainage 10,025 m, (7) Canal Syphon at chainage 10,055 m, (8) VRB at chainage 11,080 m, (9) CR cum VRB at chainage 11,770 m, (10) Canal Syphon at chainage 12,292 m, (11) Masonry of toe wall on I.P. side at chainage 12,400 m and (12) CR cum VRB at chainage 12,500 m.

[6] (1) Canal Syphon at chainage 7,159 m, (2) Canal Syphon at chainage 10,055 m, (3) VRB at chainage 11,080 m, (4) Canal Syphon at chainage 12,292 m and (5) Masonry of toe wall on I.P. side at chainage 12,400 m.

[7] CR cum VRB at 12.50 km.

not possible to provide sufficient water in constructed HLC. Only 40 cusecs water was provided from the existing canal as against envisaged 150 cusecs.

The Government stated (August 2015) that due to continuous flow of water in the canal, quantity of remaining work of excavation, earth work and lining of existing main canal could not be measured, however, the same shall be carried out subject to availability of working period. It was further stated that for remaining structures, agency has been fixed and work would be started shortly.

The reply is silent regarding delay in initiating the termination process and delay in completion of works. Facts remain that due to non-completion of modification work of canal, water could not flow as per envisaged capacity.

3.1.6.2 Incomplete distribution network

The work of laying Under Ground Pipe Line (UGPL) in phase I having a length of 30.80 km was awarded (February 2009) to a contractor with stipulated completion by February 2010. The work was completed in April 2010 and ₹ 7.96 crore was paid to the contractor, withholding an amount of ₹ 0.15 crore towards hydraulic testing *etc*. The tender condition provided to conduct hydraulic test of laid UGPL. The Division intimated the contractor (November 2010) to conduct hydraulic testing of laid pipeline. The contractor carried out testing of 10 minors between November 2010 and November 2011 out of 14 minors constructed in Phase–I. Leakages were noticed during testing and the Division instructed (between December 2010 and June 2012) the contractor to rectify the leakages and complete the testing of remaining four minors. Despite repeated instructions of the Division, contractor did not comply with it.

We observed that the Division initiated termination procedure only in September 2013 and terminated the contract in July 2014. Further, no action to rectify the defect was taken (April 2015) by the Division as a result water could not flow in entire completed UGPL leading to utilisation of only 20 ha to 55 ha CCA out of the CCA created in 2,500 ha during 2011-12 to 2014-15.

Moreover, estimates for phase II work along with feasibility study report for construction of seven more minors/ sub-minors were submitted to the Government in October 2012. The SE referred (October 2012) the matter to Central Design Organisation (CDO) to check the technical feasibility for Phase-II. The matter remained under correspondence between CDO and the Division to finalise the technical feasibility (June 2015). Therefore, despite lapse of more than two years, Government did not approve (June 2015) the estimates and feasibility study report. Thus, work of phase II could not be taken up and irrigation facilities in 1,294 ha could not be provided.

As against the total project CCA of 5,000 ha, the Division had created CCA in 3,706 ha and due to non-completion of modification work in existing main canal and leakages in laid UGPL, utilisation of created CCA remains only in 1,261 ha by lift from HLC in 1,206 ha and through minor canals in 55 ha (March 2015).

The Government stated (August 2015) that an enquiry through Quality Control Division was set up to find out whether the work of laying UGPL in phase I had been carried out as per required tender condition so as to fix the responsibility for the lapse, if any, in the execution of work. Regarding non taking up of the work of Phase II, it was replied that the work was to be implemented as an extension of Phase I based on the experience and actual working of Phase I. As such, in view of the present status of Phase I work, the Phase II work was not taken up so for.

The reply itself indicates that the Phase I work was not properly monitored by the Department during the execution of work by the contractor. Further, it does not give the reasons for late initiation of action against the contractor and also for not getting the rectification work done through any other agency.

Conclusion and recommendations

After incurring an expenditure of ₹ 54.74 crore (inclusive of small works, establishment/ other charges), the Division created CCA of 3,706 ha against targeted CCA of 5,000 ha and utilisation remained only 1,261 ha land (which was about 25 *per cent* of targeted CCA). Thus, due to slackness on part of Division/ Department in taking action for completion of works, project remained incomplete. This also defeated the intended objective after incurring expenditure of ₹ 54.74 crore and having time over run of more than nine years.

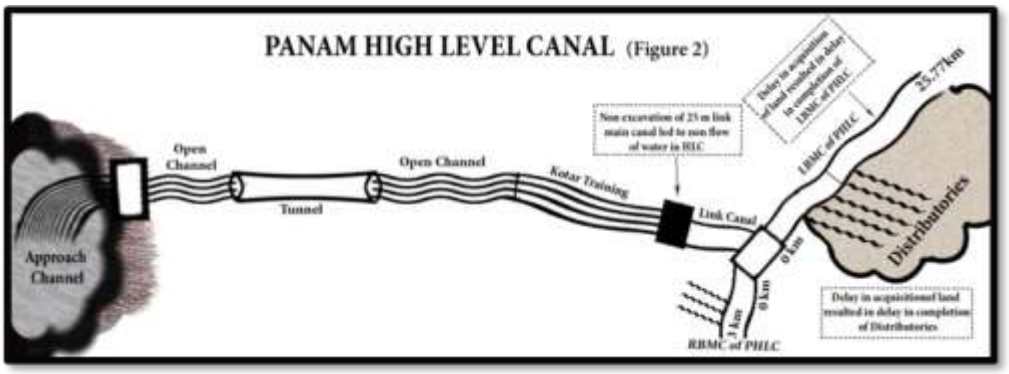
- **The Department should fix the responsibility for non initiation of timely action against the contractors for non completion of works within the stipulated time or for the abandonment of work by them. Further, Department should initiate early action to rectify the leakages in UGPL to facilitate irrigation benefits to the farmers.**

- **The Department may prepare plan of action to complete the modification of existing canal work to achieve capacity of 150 cusecs water requirement of HLC and achieve the actual utilisation as per CCA target of 5,000 ha.**

3.1.7 Panam High Level Canal (PHLC)

The Government accorded (April 1999) administrative approval for construction of PHLC with discharge capacity of 800 cusecs off taking from Panam reservoir (revalidated in June 2004) for ₹ 130.71 crore. The project envisaged to provide irrigation to high altitude command area of 18,000 ha of 75 villages of three talukas *viz.,* Shahera, Godhra and Lunawada of Panchmahal District. The Government planned to commence the project in May 2005 and complete it by March 2008 which was extended up to March 2011.

The components of the PHLC are shown in **Figure 2** below:



Components of the project

The project had the following main components.

- Link main canal as discussed in **Paragraph 3.1.7.1**.
- Right Bank Main Canal (RBMC) and Left Bank Main Canal (LBMC) of HLC as discussed in Paragraph **3.1.7.2**.
- Distribution network of 13 distributaries as discussed in **Paragraph 3.1.7.3**.

The work wise details of the project are shown in **Table 5** below**:**

Table 5: Work wise details of the PHLC project as on 31 July 2015

Components of the project	Length		Awarded cost (₹ in crore)	Completion cost (₹ in crore)	Period of		
	Tendered	Actually completed			Award of works	Stipulated completion	Completion of works
Approach channel	1.71 km	1.71 km	0.57	0.48	July 2005	January 2006	June 2006
Head regulator (HR)	1 nos.	1 nos.	2.05	2.18	March 2008	February 2009	August 2009
Open channel with tunnel	5.25 km	5.25 km	63.01	70.49	September 2005 & March 2008	September 2007 & June 2009	June 2009 & August 2009
Kotar training[8]	3.70 km	3.70 km	1.93	1.37	May 2005 & March 2008	February 2006 & March 2008	June 2006 & June 2011
Link main canal	1.69 km	1.66 km	1.36	1.31	April 2008	December 2008	May 2015
LBMC of PHLC	25.83 km	16.95 km	35.37	37.17	December 2007 & September 2013	March 2009 & August 2014	In progress
RBMC of PHLC	3.00 km	3.00 km	9.98	12.10	May 2008	April 2010	August 2012
Distributaries	80.31 km	1.73 km	29.58	19.89	March 2011 & April 2013	February 2012 & April 2014	In progress
Structures	242 nos.	176 nos.	29.25	30.96	February 2008 & March 2013	January 2009 & February 2014	In progress

Audit observations in respect of link main canal, LBMC and distribution network of HLC are discussed in the succeeding paragraphs.

3.1.7.1 Construction of link main canal

The water was to off take from the link main canal (1.69 km) into LBMC and RBMC of HLC. The link main canal starts after approach channel, HR, open

[8] Kotar training means natural valley.

channel with tunnel and kotar training. The work of construction of 1,690 m link main canal was awarded (April 2008) to a contractor with stipulated completion by December 2008. The work was completed except in 100 m (60 m to 160 m) due to land acquisition problem. The remaining work in 60 m to 135 m was completed (June 2013) by another contractor and work in 135 m to 160 m completed (May 2015) through Mechanical wing of the Department. Thus, due to delay in completion of work, water could not flow into the HLC until April 2015.

We observed that the Division submitted land acquisition proposal in September 2006. However, Division took three years (between February 2007 and March 2010) for obtaining 7/12 extract (showing the details of land and its ownership) from Mamaltadar, Shahera. Thereafter, matter remained under pursuance (between September 2011 and February 2013) with Dy. Collector, Land Acquisition and Rehabilitation, Godhra for acquisition of land. Finally, the notifications under Section 4, 6 and 9 of Land Acquisition Act, 1894 (Act) were issued between March 2013 and August 2013. Final award under Section 11 of the Act was declared in September 2013 and award payment was made in December 2013. Thus, due to this delay, land possession could not be taken by the Division and land owners were not ready to give their land and also obstructed the work.

Even after land award payment to the farmers, they continued their protest. The Division requested (between June 2013 and Mach 2015) Collector, Godhra to provide police protection for completion of work. Meanwhile, the Division took the matter with the Government in May 2014. The Government also instructed (November 2014) to obtain police protection for completion of the work. Finally, remaining portion of 25 m was executed (May 2015) under police protection.

3.1.7.2 Construction of LBMC of PHLC

The RBMC has been completed in August 2012 and LBMC from chainage 0 to 16.95 km has been completed in June 2012. The construction of LBMC from chainage 16.95 to 25.83 km was awarded in November 2009 with stipulated completion by October 2010. After executing work valued at ₹ 5.59 crore, work was withdrawn (October 2012) due to non-acquisition of private and forest land. The remaining work was awarded (September 2013) in three parts with stipulated completion by August 2014. The works are in progress (March 2015).

We observed that 19.38 ha land was required for the work (0.98 ha forest land, Government land 2.49 ha and private land 15.91 ha). For acquisition of 15.91 ha private land as per Land Acquisition Act, 1894, Joint Measurement Survey (JMS) was done between February 2010 and December 2011 with the Revenue Authority and final award was issued (December 2013) for 0.2306 ha only. Meanwhile, during execution, possession of 15.33 ha private land was obtained through consent from farmers. However, possession of 0.347 ha of private land could not be received by the Division. Further, permission for diversion of forest land of 0.98 ha was received only in November 2012. Thus, out of 19.38 ha land required, 19.03 ha land (0.98 ha forest land, 2.49 ha

Government land and 15.56 ha private land) has been acquired so far (August 2015).

We also observed that process of land acquisition for private land and forest land was started by the Division after award of the work. Consequently, this delayed the completion of the LBMC.

3.1.7.3 Construction of Distribution network

As envisaged, three distributaries under RBMC and ten distributaries under LBMC were to be constructed. Of which, works of three distributaries of RBMC (28.67 km) and seven distributaries of LBMC (51.64 km) were awarded between March 2011 and April 2013 with stipulated completion between February 2012 and April 2014. The remaining work of three distributaries of LBMC (34.16 km) had been planned to be taken up after completion of awarded works. Of the awarded works, one distributary of LBMC (5/R involving land of 1.86 ha land) was completed in January 2014.

For the remaining 12 distributaries of RBMC and LBMC of PHLC, 200.88 ha land (3.66 ha Government, 1.90 ha forest and 195.32 ha private land) was required to be acquired. At the time of issue of work orders (between March 2011 and April 2013), written consent from farmers was obtained for 83.65 ha land. The Division acquired only 30.30 ha land (15 *per cent*) as per Land Acquisition Act, 1894 and permission for diversion of forest land has been received by March 2015.

We observed for three distributaries of RBMC that the delay was mainly due to non-availability of surveyor after request (May 2009) to carry out JMS (one year), more than one year in submission of JMS (August 2012) by private agency after completion of JMS (March 2011) and delay of one year in demanding (September 2013) JMS checking fee by Land Record Office. After checking of JMS (January 2014), proposal for acquisition of land was submitted (April 2014) by the Division to the Collector. But the same was returned (April 2014) stating that proposal as per new Act *namely* "Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013" may be prepared and resubmitted. However, even after one year, proposal was not resubmitted by the Division on the plea that detailed guidelines for submission of revised proposal as per new Act were awaited from the Department (March 2015).

We also observed that against the required land of 154.49 ha for nine distributaries of LBMC, JMS for 14.59 ha were carried out between September 2012 and March 2013, but proposals for acquisition of land were not submitted by the Division to Dy. Collector, Land Acquisition & Rehabilitation (March 2015). The Dy. Collector had declared notification under Section 4 for 64.64 ha land between February 2011 and November 2013 but final awards were issued (between September 2011 and January 2015) only for 28.44 ha. No action for acquisition of private land of 75.26 ha (38 *per cent*) for three distributaries (6/R, 7/R and Eastern) has been initiated (March 2015). Thus, out of 202.74 ha land required for distribution network,

only 30.30 ha private land (15 *per cent*) and 1.90 ha forest land has been acquired so far (August 2015).

We also observed that farmers affected due to ongoing construction of distributaries of LBMC (i.e. distributaries 8/R and 9/R) filed (July 2009) the case in Lower Court. The court announced (February 2013) judgment stating that Department has no right to dig canal without adopting and completing the procedure laid down under the LAQ Act and restrained the Department from digging of land or to damage the field in any manner up to acquisition.

In response to the above observations, the Government stated (August 2015) that execution of works were started with consents of farmers along with the process of land acquisition. Department had submitted the proposals well within time and taken sufficient involvement for carrying out the JMS by deploying private surveyors. However, the Revenue Authority could not certify the JMS done through private surveyor timely. Consequently, land acquisition proceedings were delayed due to non-availability of surveyor with them. This led to delay in issue of final awards for land acquisition. Now the awards have been declared in June 2015 and works are targeted to be completed by December 2016.

Conclusion and recommendation

Initiation of land acquisition procedures after award of work and lack of co-ordination, effective pursuance and follow up with the Revenue Authority led to abnormal delay in execution of works. Out of 19.38 ha and 200.88 ha land required for LBMC (chainage 16.95 km to 25.83 km) and 12 distributaries of RBMC and LMBC of PHLC, 19.03 ha and 30.30 ha land respectively were acquired. 0.35 ha and 170.59 ha land of LBMC and distributaries are yet to be acquired. Consequently, 4,070 ha CCA only could be created and actual utilisation was only in 1,700 ha against the targeted CCA of 18,000 ha even after lapse of more than seven years and investment of ₹ 219.69 crore (June 2015). Thus, irrigation facilities could not be provided to the farmers in the area of 16,300 ha (envisaged 18,000 ha – 1,700 ha by filling 22 check dams).

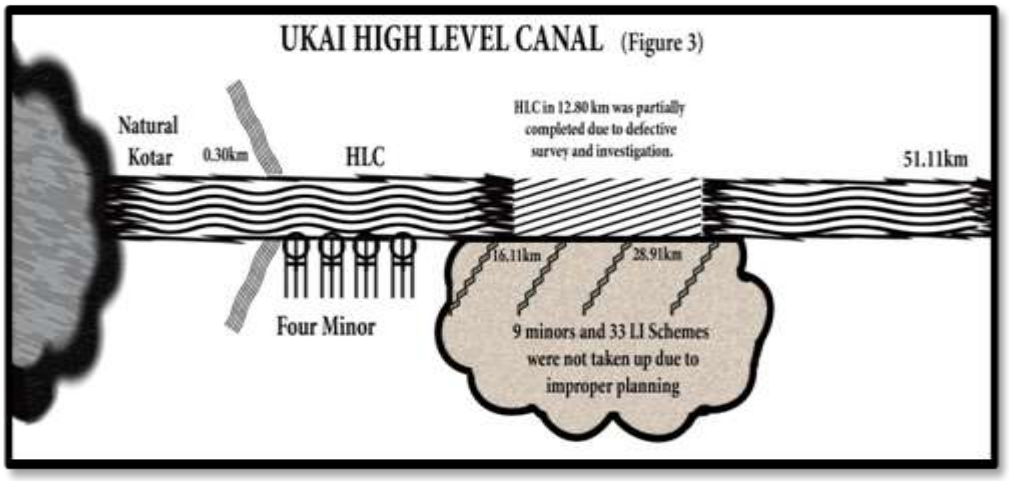
The Department should develop a system to submit land acquisition proposals on time to the Revenue Authority and ensure proper co-ordination and effective pursuance with Revenue Authority to acquire land in time.

3.1.8 Ukai Left Bank High Level Canal (ULBHLC)

The ULBHLC project envisaged to provide irrigation facilities in 9,900 ha (by lifting 3,400 ha and by gravity flow 6,500 ha) of villages of Vyara and Songadh Talukas. The project works were executed through two Divisions *viz.*, EE, Ukai Division-1, Ukai (0 to 28.94 km) and EE, VER-II Project Division, Vyara (28.94 to 51.11 km). The Government accorded (August 1997) administrative approval (AA) for construction of ULBHLC project for ₹ 55.15 crore. Neither DPR was prepared nor any stipulated date of completion of the project determined. The work was initiated in October 2003.

The AA was further revised (January 2010) to ₹ 159.61 crore mainly due to inflation and increase in estimated length and depth of canal.

The components of the ULBHLC are shown in **Figure 3** below:



Components of the project

The project had three main components:

- Head regulator (HR): the construction of which was completed in October 2005.
- Left Bank HLC of 51.11 km as discussed in **Paragraph 3.1.8.1**.
- Distribution network of 13 minors and 37 Lift Irrigation works as discussed in **Paragraph 3.1.8.2**.

The work wise details of the project are shown in **Table 6** below.

Table 6: Work wise details of the ULBHLC project as on 31 July 2015

Components of the project	Length		Awarded cost (₹ in crore)	Completion cost (₹ in crore)	Period of		
	Tendered	Actually completed			Award of works	Stipulated completion	Completion of works
Head regulator	1	1	2.60	2.93	October 2003	October 2004	October 2005
LBHLC	51.11 km	38.28 km	61.86	59.13	October 2005 & May 2013	September 2007 & November 2013	In progress
Construction of Structures	156	146	41.62	45.67	February 2006 & October 2013	January 2007 & September 2014	In progress
Minors	13 nos.	4 nos.	0.99	0.99	March 2008	February 2009	February 2009
Lift Irrigation	4 nos.	4 nos.			Being implemented by GWRDC		

Audit observations in respect of main canal and distribution network are discussed in the succeeding paragraphs.

3.1.8.1 Delay in completion of Left Bank HLC

The works of construction of HLC between chainage 30 to 16,110 m (work 1) and 16,110 to 27,195 m (work 2) were awarded (October 2005 and February 2007) at a total cost of ₹ 21.42 crore with stipulated completion between July 2007 and November 2008. Due to huge variation in quantities required against the tender quantity, the contractor of work 1 was relieved

(August 2009) after executing work valued at ₹ 10.66 crore out of ₹ 11.65 crore. The remaining work was actually completed (June 2012) by another contractor at a cost of ₹ 4.75 crore.

Similarly, in work 2 also due to huge variation in quantities, after executing work valued at ₹ 6.14 crore out of ₹ 9.77 crore, the work was stopped (February 2009) by the contractor. The remaining work was being executed by other contractors and it was in progress and the expenditure incurred was ₹ 23.16 crore (March 2015).

We observed that for work 1 and 2, initial surveys (April 1996 and January 1997) and final surveys (January 1998 and December 1998) were carried out by the Division. However, during execution of works, huge variations in the tender quantities *vis-à-vis* actual quantities of excavation (hard rock) were noticed. The Division conducted revised survey (April 2006 and January 2008) and re-awarded the works. As against the total tender quantities of 22,22,775 cum in the originally awarded works, actual execution after re-award was 39,85,468 cum as of March 2015. The excess execution was 79 *per cent* more than the original tendered quantities. Thus, due to defective survey, works which were planned to be completed in July 2007 and November 2008 remained incomplete after delay of 77 months (November 2008 to March 2015) and after incurring an expenditure of ₹ 44.71 crore.

The Government stated (August 2015) that there was an error in initial survey leading to huge variation in the tendered quantity than estimated quantity. The Government had initiated departmental enquiry against the concerned staff related with original survey.

The reply of Government is indicative of improper survey conducted by the Division leading to time overrun for more than six years in completion of the work.

3.1.8.2 Delay in completion of the distribution network

In the scheme, 13 minors and 37 Lift Irrigation (LI) works were planned for the distribution network. Out of these, four minors and four LI schemes were completed up to July 2014. The planning of other nine minors[9] and 33 LI schemes was not taken up simultaneously with the execution of HLC works. Even, the survey for nine minors was conducted only during November 2011 to January 2014. Therefore, as against 9,900 CCA, only 3,700 ha was created and of which only 400 ha was utilised up to March 2015.

We observed that underutilisation of created CCA was mainly due to non-completion of main canal and non-taking up the works of minors and lift irrigation schemes in time bound manner.

The Government stated (August 2015) that if the main canal works were delayed for any reason, then the expenditure incurred on distribution system

[9] (i) Vyara (ii) Kanpura (iii) Jetwadi (iv) Chirma (v) Dhat (vi) Bamanwal (vii) Jesinghpura (viii) Umarvav najik and (ix) Gadat.

would be unfruitful for initial period. Hence, the work of distribution system was planned to be taken up after completion of main canal work. It was further stated that now, it was planned to be completed within three years.

The reply is not convincing as in the case of KLBHLC and PHLC, the Department had taken up distributaries works along with the execution of main canal works. Further, in this HLC also, works of four minors and four LI have already been completed by the Department. Thus, non completion of minors and LI schemes due to improper planning in taking up works led to under creation of CCA and under utilisation of created CCA.

Conclusion and recommendation

Due to defective survey and investigation and non-taking up of minors and LI schemes for distribution of water into farms, after incurring an expenditure of ₹ 124.83 crore, utilisation of created CCA remained about 4 *per cent* of total envisaged as of March 2015. The project also involved time overrun of more than six years.

- **The Department may ensure that the Divisions prepare estimates after conducting proper and detailed survey and investigation.**

3.1.9 Conclusion

The three HLC projects aimed to provide irrigation facilities to the tribal people in hilly command areas for 32,900 ha between March 2008 and January 2009. The Department started projects works between October 2003 and May 2005. However, failure of the Department in conducting proper geological/ soil survey and investigation before preparation of the estimates, lack of monitoring, inadequate efforts in expediting the execution of works, non-completion of HLC and distributaries in full length due to lack of co-ordination and effective pursuance with the Revenue Authority in acquisition of land, non-taking up of distributaries and minors canals works led to incurring of expenditure without meeting the objective fully. As a result, against the target of providing irrigation facilities to 32,900 ha, the CCA of 11,476 ha only has been created and, out of this, only 3,361 ha CCA has actually been utilised. The Department needs to complete these projects at earliest by addressing the bottlenecks and pending issues.

3.2 Avoidable payment of electricity charges

Inefficient use of electrical energy in operation of Jalundra and Fatepur Pumping Stations led to avoidable expenditure of ₹ 7.37 crore on contract demand charges.

Government of Gujarat (GoG) had taken up a project (November 2001) for irrigation in North Gujarat by lifting water from Narmada Main Canal (NMC) at Jalundra to fill Hathmati and Guhai Dams for irrigation and drinking water purpose. For this project, pipelines were to be laid from NMC to Hathmati and

Guhai Dams through four[10] major ponds with each pond having a pumping station. The Administrative Approval (AA) to the project was granted by the Government in November 2001 for ₹ 138 crore (Revised to ₹ 333.37 crore in October 2004). The project works were taken up between February and December 2005 at a cost of ₹ 287.15 crore (estimated cost ₹ 300.87 crore) with stipulated date of completion of February 2006 and September 2006. The works were completed between March 2007 and February 2010.

Up to 2013-14, the Executive Engineer (EE), Water Resources Investigation Division (WRI), Himmatnagar (the Division) and from 2014-15, the EE, Drainage Division, Gandhinagar were in charge of operation and maintenance of the pumping stations.

The Division entered into an agreement with Uttar Gujarat Vij Company Limited (UGVCL) in November 2006 for supply of 8,250 Kilo Volt Ampere (KVA) power to Jalundra Pumping Station (JPS) and 4,800 KVA power for Fatepur Pumping Station (FPS). As per provision in the tariff schedule of UGVCL, monthly billing demand (MBD) charges are recoverable on the highest of (a) actual maximum demand established during the month or (b) 85 *per cent* of the Contract Demand (CD).

The power supply for JPS and FPS commenced in June 2008. The actual maximum demand for JPS remained between 2,604 to 4,549 KVA which was 19 to 55 *per cent* of CD from April 2011 to March 2015. Therefore, MBD was raised for 7,013 KVA (85 *per cent* of 8,250 KVA) and the Division made payment of demand charges of ₹ 8.58 crore from April 2011 to March 2015**.** Similarly, the actual maximum demand for FPS remained between 924 to 2,037 KVA which were 19 to 42 *per cent* of CD from April 2011 to March 2015. Therefore, MBD was raised for 4,080 KVA (85 *per cent* of 4,800 KVA) and the Division made payment of demand charges of ₹ 5.25 crore from April 2011 to March 2015**.**

From the review of electricity bills, we observed (January 2011/ May 2014) that though the actual demand in the JPS and FPS continuously remained below 85 *per cent* of the CD, the Department had not assessed the actual requirement of power. In fact, considering the actual power demand registered by JPS and FPS during the period April 2011 to March 2015, the maximum CD of 4,500 KVA and 2,100 KVA respectively was sufficient to serve requirement of the Division, which could have saved ₹ 7.37 crore as MBD charges[11] as shown in **Appendix V.** Further, UGVCL agreed (January and February 2013) to reduce the CD from 8,250 KVA to 7,000 KVA for JPS subject to compliance of certain terms and conditions[12]. However, it has not been reduced due to non-compliance of terms and conditions (April 2015).

[10] Jalundra, Labhor, Fatepur and Khed.

[11] Reasonable contract demand considered based on the maximum actual utilisation of CD during the period April 2011 to March 2015.

[12] Procurement of 66 KV CT Ratio 75/1 Amp from approved vendor of GETCO, replacement of tariff metering 66 KV CTs as per CEA regulation of March 2006, submission of test report of Government approved electrical contractor.

The Government stated (April 2015) that use of pipeline was less during last four years due to good monsoon and no demand for filling water in Hathmati and Guhai reservoirs was received by the concerned authority. But in case of water scarce years, the available infrastructure could be utilised to full capacity. Therefore, considering this situation, the contract demand could not be reduced drastically. Further, for reduction of CD up to 7,000 KVA at JPS, it was stated that the matter is under process for compliance of terms and conditions set by UGVCL. The EE requested (July 2015) to UGVCL for reduction of CD up to 7,000 KVA and 4,000 KVA for JPS and FPS respectively. Thus, non-detection of inefficient use of electrical energy in operation of JPS and FPS led to avoidable payment of ₹ 7.37 crore on demand charges.

The Government may consider directing the Divisions to review the electricity bills for determining the required contract demand.

3.3 Infructuous expenditure

Delay in completion of works due to delay in obtaining permission from Railway and Forests Department resulted in infructuous expenditure of ₹ 5.38 crore on payment of electricity bills.

North Gujarat region is prone to water scarcity arising due to scanty rainfall. Consequently, the storage capacity of the reservoirs is not fully utilised which has a cascading effect on the irrigation of the command area of 45,823 hectare (ha). The Government decided (August 2001) to fill up the reservoirs, including Dantiwada by diverting the surplus water from Narmada Main Canal (NMC) with the objective of addressing the recurrent water scarcity problem. Accordingly, it launched a project Dantiwada Sipu Lift Pipeline Project (DSLP) which envisaged diversion of one million acre feet water by lifting from NMC to Dantiwada at chainage 375.10 km through mild steel (MS) pipeline. Thereafter, the water from the Dantiwada reservoir was to be utilised for irrigation of the command area, providing drinking water and filling up the 22 ponds enroute the existing network of canals of the reservoir.

The Government awarded (May 2008) consultancy work of planning and techno economic work at a cost of ₹ 38 lakh to M/s. Harmony Associates, Vadodara (consultant) to be completed within 120 days. However, before completion of consultancy work, the Executive Engineer, Drainage Division, Gandhinagar (the Division) invited (September 2008) expression of interest (EOI), in anticipation of obtaining administrative approval (AA), to short list the technically qualified contractors for submission of price bid. Subsequently the Superintending Engineer, Sujlam Suflam Circle-1, Gandhinagar approved (December 2008) the 79 km long alignment (including three pumping stations) from NMC to Rampura-Khimana-Bhadath Dantiwada-Sipu as identified by the consultant at a cost of ₹ 482 crore. The Government also accorded (April 2010) AA to the plan and estimates of ₹ 482.05 crore and published (August 2010) notification for Right of Use (ROU) for laying the pipeline.

The Engineering, Procurement and Commissioning (EPC) contracts for laying of pipeline from NMC to Dantiwada Reservoir Main Canal including

construction of pumping stations was segregated into three Sections[13] and awarded (December 2010) to a contractor M/s. MEIL-SMC-WPIL (JV) at a cost of ₹ 366.43 crore to be completed by December 2012. Contractor completed Section I in November 2012. However, Section II could be completed only in June 2014 after a delay of 18 months and Section III was completed in March 2015 after a delay of 27 months due to issues relating to permission/ diversion of land from Railway and Forest Authorities.

We observed (December 2014) that though the scope of work for Section II awarded in December 2010 included the laying of pipeline under the Bhiladi railway line, prior approval of the Railway Authority for crossing the railway line was not obtained in time by the Division. Division submitted (March 2012) the proposal for laying of pipeline across the railway line after a delay of 15 months. The Railway Authority gave permission in June 2013 to carry out the proposed work after payment of requisite deposit and appointment of approved consultant for supervision. This resulted in completion (June 2014) of the pipeline work after a delay of 18 months.

It was further observed that in respect of Section III, the Division published the notification for ROU in August 2010 which did not include survey numbers of land falling under reserve forest land. The fact of alignment passing through 3.72 ha of reserve forest land came to notice only after the Forests and Environment (F&E) Department stopped (December 2011) the work. Pursuant to this, the Division finally submitted (April 2013) proposal to F&E Department for diversion of forest land after rectifying the shortcomings pointed out by F&E Department in their earlier proposal (February 2012). The in-principle approval for diversion of forest land was granted by Ministry of Environment, Forests and Climate Change, Government of India only in November 2014. The work was completed in March 2015 after a delay 27 months from stipulated date of completion.

In the meantime, the Division entered into an agreement with Uttar Gujarat Vij Company Limited (UGVCL) in July 2011 and September 2011 for supply of HT electricity power for Section II and Section III respectively. However, due to delay/ non-completion of works of Section II and III, Division paid minimum energy charges of ₹ 5.38 crore (₹ 3.47 crore: Section II from March 2013 to June 2014 and ₹ 1.91 crore: Section III from May 2013 to November 2014) as per the terms and conditions though electricity was not utilised.

Award of contract without complete/ detailed survey and investigations coupled with delay in obtaining required permissions led to avoidable delay in execution of the works and achieving the desired results as envisaged. Thus, the benefit of the Project did not reach the region and also caused infructuous expenditure of ₹ 5.38 crore towards minimum energy charges without actual utilisation of electricity.

[13] (i) Section-I: NMC chainage 375.10 km to Rampura including construction of pumping station at Changa (Cost: ₹ 140.93 crore), (ii) Section-II: From Rampura (near SSSC) to Bhadath including construction of pumping station at Rampura (Cost ₹ 146.46 crore) and (iii) Section-III: From Bhadath to Dantiwada Reservoir main canal and construction of pumping station at Bhadath (Cost ₹ 79.04 crore).

The Government stated (August 2015) that route alignment survey was carried out by the consultant and ROU was published (August 2010) for laying of pipeline. During this process, forest demarcation was not observed at site but it came to notice only in December 2011 when F&E Department asked to stop the work. It was further stated that as per the terms and condition of the tender, EPC contractor was to get the approval of crossing of railway line from the competent authority and accordingly, they approached Railway Authority with proposal in October 2011. Hence, the delay was not attributable to the Department.

The reply itself substantiates that thorough and complete survey was not done and the survey report was deficient as the survey numbers falling under forest area were not covered in notification for ROU issued in August 2010. Further, although the tender put responsibility of getting approval of Railway Authorities on the contractor, all the procedural formalities for getting the requisite approval/ permission was completed by the Department. Thus, the contractor was only the agent of the Department and the primary responsibility lies with the Department to keep a watch on the progress of work and clearance of bottlenecks in speedy completion of the project.

3.4 Loss of interest

Non-inclusion of condition for levy of interest/ penalty for non-payment of water charges in advance by 10th of each month led to loss of interest of ₹ 1.19 crore.

The Narmada, Water Resources, Water Supply and Kalpsar Department (Water Resources) issued (February 2007) Government Resolution (GR) for bringing uniformity in rates and conditions for supply of water for agricultural and non-agricultural purpose from ponds, canals, notified rivers, check dams *etc*. As per condition 10 of GR *ibid*, all licensees who are availing water for non-agricultural purpose shall pay their estimated water charges in advance by 10th day of each month based on monthly water requirement. Further, condition 11 of GR stipulates levy of interest at the rate of 12 *per cent per annum* in case of non-payment of water bill within 60 days from the date of issue of monthly bill.

We observed that though the condition of advance payment before 10th of every month included in the circular but levy of penal interest/ penalty was not provided for non-making of advance payment. The licensee did not make any advance payment by 10th day of each month. The Division also could not levy any interest/ penalty on non-payment of the advance amount, from 10th of each month until the date of payment as there was no specific provision for charging interest in the GR. The impact of non-inclusion of condition for levy of interest/ penalty for non-payment of user charges in advance by 10th of each month is illustrated below.

We scrutinised the records of Executive Engineer, Ukai Left Bank Canal Investigation Division No. 2, Valod (the Division) who was providing water for industrial purpose to its only consumer, M/s. J. K. Paper Mill (licensee) since March 1995. The agreement was extended (February 2013) for a period

of five years effective from July 2011 and was valid up to June 2016 to draw six million gallon water *per* day (MGD).

We noticed (August 2013) that during the period 2010-11 to 2014-15, the Division raised the monthly bills regularly for drawal of water. The licensee paid water charges of every month within the grace period of 60 days from date of issue of the bills. However, licensee did not make any advance payment by 10th day of each month. Monthly advance of ₹ 14.20 lakh to ₹ 104.55 lakh was due for payment considering the three months average of water charges paid by the licensee preceding the month for which advance payment was due. The Government suffered interest loss of ₹ 1.19 crore due to the non-payment of advance amount by the licensee as shown in **Appendix VI.** Had the provision for interest on account of non-payment of advance amount been specified in the GR, the Division could have recovered interest for non-payment of advance amount by the licensee.

The Government stated (June 2015) that Department have security deposit in advance on 1st April of each year equivalent to three months water charges and grace period of 60 days is given for payment of water bill, hence, there is no provision for taking interest on advance payment.

The reply is not convincing as the Division is collecting amount equivalent to three months water charges as security deposit for reserving contracted water quantity in pursuance to condition 20 of the GR *ibid*. The reply is silent in respect of the monthly advance payment as stipulated in condition 10 of the GR *ibid*. The GR does not have any disincentive for non-payment of advance as stipulated. The Government needs to consider amending the GR to incorporate interest clause for non-payment/ late payment of advance amount as specified under condition 10 of the GR.

NARMADA, WATER RESOURCES, WATER SUPPLY & KALPSAR AND FINANCE DEPARTMENTS

3.5 Excess payment

Award of work for hiring of vehicles for various Government Departments/ offices to the service provider not registered with Service Tax Department led to undue benefit amounting to ₹ 23.93 lakh on account of payment of service tax to the service provider.

Service tax is a tax levied by the Central Government on service providers on certain service transactions, but is actually borne by the customers. Every person liable for paying service tax shall make an application to the concerned Superintendent of Central Excise for registration within a period of 30 days from the date on which the service tax under Section 66 of the Finance Act, 1994 (32 of 1994) is levied. Further, every person providing taxable service is required to issue an invoice, a bill or challan signed by him or a person authorised by him. Such invoice, bill or challan should be serially numbered and should contain information such as (i) name, address and registration number of such person, (ii) name and address of the person receiving services,

(iii) description, classification and value of taxable service provided and (iv) service tax[14] payable thereon.

Water Resources Department of GoG, *vide* resolution of May 2012, allotted work of fixing of agencies for services of hiring of vehicles for offices located at Gandhinagar and Ahmedabad to Executive Engineer, Irrigation Mechanical Division No. 4, Ahmedabad. The EE invited the tender (August 2012) for the work with condition to submit the copy of service tax registration along with other documents in Annexure-3 of the tender documents. M/s. Pramukh Travels, Gandhinagar who was the lowest bidder had submitted copy of service tax registration bearing No. AMDPP8697DST001.

The Department accepted (January 2013) lowest bid of service provider for rates ranging between ₹ 22,825 and ₹ 36,250 *per* month which were **inclusive of service tax** as per conditions of the tender for various types of seven vehicles. The work order for supply of vehicles on hiring was issued (February 2013) for a period of one year *i.e.*, up to February 2014. The period of service was extended (February 2015) up to May 2015. During the period February 2013 to March 2015, total 30 offices had availed the services and ₹ 2.17 crore was paid to the service provider by the offices which was inclusive of service tax amount of ₹ 23.93 lakh (inclusive of cess).

During post audit of vouchers passed by the Pay and Accounts Officer (PAO) at Resident Audit Office, Gandhinagar, we observed that the M/s. Pramukh Travels had submitted their bills to the offices without indicating service tax registration number and amount of service tax involved in the bills. We had verified the status of service tax registration bearing number AMDPP8697DST001 provided by M/s. Pramukh Travels through Government website and received message that "No records available for given Assessee Code". The Superintendent of Service Tax, Gandhinagar also confirmed (March 2015) that M/s. Pramukh Travels, Gandhinagar obtained service tax registration bearing number AMDPP8697DSD001 on 28 January 2015.

Thus, it was clear that M/s. Pramukh Travels was not a registered service provider. The authenticity of the registration number provided by M/s. Pramukh Travels was not free from the doubt or they might have obtained earlier service tax registration only to get the contract and thereafter cancelled the registration. Further, the Division has not provided condition in the tender for verifying the service tax challan of the service provider. As a result, none of the offices insisted for obtaining service tax paid challan from M/s. Pramukh Travels. During the period February 2013 to March 2015, M/s. Pramukh Travels had collected service tax of ₹ 23.93 lakh from the offices but not remitted to the Government. Thus, due to award of work to the unregistered service provider and non-inclusion of condition in tender for verification of service tax payment led to unjust enrichment of the service provider.

[14] From 24 February 2009 to 1 March 2012 and from 1 April 2012, the service tax was payable at 10 *per cent* and 12 *per cent* of the gross amount plus two *per cent* Education Cess on service tax plus one *per cent* Secondary & Higher Education Cess on service tax *i.e.*, totaling to 10.30 *per cent* and 12.36 *per cent* respectively.

The Government while accepting the audit observation stated (October 2015) that they had taken up the matter with Assistant Commissioner of Central Excise, Gandhinagar in September 2015 for the recovery of service tax dues from M/s. Pramukh Travels.

The Government should introduce the system of verification of service tax registration of the service provider by using Government website or through Service Tax Department to avoid award of work to unregistered service provider.

ROADS AND BUILDINGS DEPARTMENT

3.6 Loss due to non-recovery of cost of cement saved in mix design

Non-compliance/ non-inclusion of the tender condition regarding recovery in case of less consumption of cement from contractors led to loss of ₹ 3.58 crore between October 2013 and February 2015.

The contracts awarded by Roads and Buildings (R&B) Department provide for execution of works with 'controlled cement concrete (CCC)' (mix-design[15]) of the strength of M-15[16], M-20, M-25, M-30, M-35 and M-40. The Government issued instructions (December 1986) for making provisions of 320 kilogram per cubic metre (kg/ cum), 400 kg/ cum, 450 kg/ cum, 475 kg/ cum, 500 kg/ cum and 525 kg/ cum cement for the above grades respectively in the preparation of estimates.

The Divisions of the Department considered cement level as per instructions of December 1986 for the estimation purpose. There is possibility of variation in the cement levels as per approved mix design when tested by the Government laboratory. Therefore, it is desirable to include suitable condition in the standard tender form for recovery/ payment for variation in cement levels during the execution. Some Divisions had included 'special condition' in the tender agreement for recovery of less consumption of cement as per mix design. However, insertion of such condition in the tenders was not made uniformly by the Divisions.

Four Divisions of R&B Department awarded contracts for six construction works for ₹ 300.21 crore between June 2011 and September 2013. Three works were completed between December 2012 and June 2014. The other three works were in progress (February 2015) as shown in **Appendix VII**.

We observed the instances of loss to the Government due to non-inclusion of suitable condition for less consumption of cement and failure to implement the condition for recovery of less consumption of cement as per test results of mix design as detailed in the **Table 7** below:

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[15] It is the process of selecting suitable ingredients of concrete and determining their relative amounts with the objective of producing a concrete of the required strength, durability and workability as economically as possible, termed the concrete mix design.

[16] In the designation of concrete mix, M refers to the mix and number to the specified compressive strength of 150 mm size cube at 28 days.

Table 7: Details of loss due to deficient tender terms

Sl. No.	Name of the Division	Particulars	Loss to the Government (₹ in crore)
1	Capital Project (CP) Division No. 3, Gandhinagar	No recovery condition was provided for less consumption of cement in two works.	0.92
2	Capital Project (CP) Division No. 1, Gandhinagar	The Divisions did not provide condition for recovery of cost in the tender for use of controlled cement concrete (CCC) by Ready Mix concrete (RMC).	0.74[17]
3	R&B Division (City), Ahmedabad		0.86
4	R&B Division (City), Vadodara	Condition was provided for recovery in the tender. However, recovery was not made.	1.06
Total			**3.58**

Our observations are discussed below:

(A) Recovery condition included in the tender:

The EE, R&B Division (City), Vadodara incorporated condition for recovery of less consumption of cement for CCC by RMC. As per test result of mix designs, there were savings of 1,763.12 MT cement. However, EE did not recover the cost of cement saved in the items of work at ₹ 6,000 *per* MT which resulted in loss of ₹ 1.06 crore (1,763 MT × ₹ 6,000). The Division stated (June 2014) that recovery for difference in cement level would be made from the further payment of work done.

(B) Recovery condition not included in the tender:

The Executive Engineer (EE), CP Division No. 3, Gandhinagar did not incorporate suitable recovery condition for less consumption of cement in the tenders of two works. There were savings of 1,538.66 MT cement in the works. However, due to non-inclusion of the recovery condition in the tenders, Division could not recover the cost of cement saved in the works and suffered loss of ₹ 0.92 crore (1,538.66 MT x ₹ 6,000 *per* MT). The Division accepted (February 2015) that the provision was not made in the tender and recovery would be made.

Similarly, the EE, CP Division No. 1, Gandhinagar and R&B Division (City), Ahmedabad did not include recovery condition for less consumption of cement for CCC items by using RMC in three works. As a result, though there were savings of 3,464.33 MT cement in the works, Divisions could not recover the amount of cost of cement saved in the works. The Ahmedabad Division recovered ₹ 0.17 crore from the contractors for cement utilised in

[17] It includes five items of CCC without RMC which were covered under special condition for recovery but ₹ 0.07 crore was not recovered.

RCC items only. This led to loss of ₹ 1.60 crore[18]. The EE, CP Division No. 1, Gandhinagar and R&B Division, Ahmedabad stated (April 2014 and October 2014) that recovery clause was applicable except to the CCC items by RMC and therefore question of recovery of less consumption of cement did not arise.

The replies of EE, CP Division No.1, Gandhinagar and R&B Division (City) Ahmedabad are not convincing as Divisions had not safeguarded financial interest of the Government by incorporating suitable recovery condition for less consumption of cement in CCC items executed by RMC. We also noticed that in another case, R&B (City) Division of Ahmedabad[19] and Vadodara had provided 'special condition' for recovery towards less consumption of the cement due to mix design in CCC items by RMC. Since, the recovery condition was already provided in the other cases, the CP Division-1, Gandhinagar and Ahmedabad (City) Division should have incorporated the suitable recovery condition in these works also.

Thus, due to non-inclusion of the condition regarding recovery, in case of less consumption of cement, from contractors as well as non-compliance of the said condition where it had been incorporated, there was a loss of ₹ 3.58 crore to the Government.

The matter was reported to the Department in March 2015; their reply was awaited (October 2015).

3.7 Avoidable expenditure

The opportunity to award a work at competitive price was lost due to non-invitation of fresh tender for the work at a changed site and also resulted in extra expenditure of ₹ 4.45 crore.

The Collector, Junagadh allotted (December 2006) 4.19 hectare (Ha) land at Khamdhrol to the Education Department for Government Polytechnic. The Executive Engineer (EE), Roads & Buildings (R&B) Division, Junagadh was in-charge for execution of the construction work. As the site at Khamdhrol was in low lying area, the site was not considered fit for polytechnic by the Education Department which intimated (February 2010) EE that they had initiated action for changing the site for the polytechnic from Khamdhrol to Khadiya[20] village of Junagadh.

Although aware of the action being taken for changing the site to Khadiya, R&B Department, without recording any justification, went ahead with

[18] **CP Division No.1, Gandhinagar:** Total saving in cement was 1,362.03 MT and input rate of cement was 5,400 per MT. Thus, recovery would be ₹ 0.74 crore. **R&B Division (City), Ahmedabad:** Total saving of cement was 167.93 MT and 1,934.37 MT and input rates were ₹ 5,800 and ₹ 4,840 per MT respectively. Thus, total recovery would be ₹ 1.03 crore and amount recovered was ₹ 0.17 crore. Therefore, net recovery works out to ₹ 0.86 crore.

[19] Construction of New Court Building at Ahmedabad was awarded in February 2014.

[20] 10 Ha. of land at Khadiya, Junagadh was earlier allotted (September 2008) to Education Department for construction of Engineering College. The Revenue Department was requested (February 2010) to earmark 6 out of 10 Ha. of land for construction of the Polytechnic at Khadiya instead of at Khamdhrol.

invitation (September 2010) of tender for construction of the Polytechnic at Khamdhrol with the estimated cost of ₹ 15.35 crore. The R&B Department accepted (January 2011) the tender of a contractor M/s. Backbone Enterprise Limited for ₹ 15.94 crore. EE issued work order (February 2011) to the contractor for construction of the Polytechnic with stipulated time of completion by May 2012. In the meantime, EE had also carried out (December 2010 to January 2011) the soil bearing capacity (SBC) test through an agency at Khadiya.

In May 2011, the new site at Khadiya was made available to the Education Department for construction of the Polytechnic. However, before issue of work order, EE did not consider revision of the cost due to shifting of site at Khadiya and EE allowed the contractor to start the work at Khadiya from May 2011. The soil condition at Khadiya warranted revision in the construction design of the Polytechnic (*i.e.* increase in the columns by 340 numbers and the plinth area by 2,475 sq mt against the original design) leading to increase in the cost of work from ₹ 15.94 crore to ₹ 36.14 crore[21]. As the work was awarded based on the estimated cost of ₹ 15.35 crore, the subsequent increase in quantum of work due to soil condition was awarded (March 2012 and December 2013) to the contractor by way of nine extra items valued at ₹ 3.58 crore and 74 excess items valued at ₹ 19.19 crore. The payment of ₹ 34 crore was made to the contractor (March 2015). The work was completed in May 2015 and final bill payment was awaited (August 2015).

Of the 74 excess items, 34 items involved execution of quantity beyond 130 *per cent*[22]. Out of the 34 items, 31 items were executed at applicable current schedule of rate (SoR) which was higher by ₹ 16 to ₹ 2,052 against its tendered rates. The remaining three items were executed at applicable current SoR which was lesser by ₹ 8 to ₹ 41 against its tendered rates. This led to net extra expenditure of ₹ 4.45 crore[23] on the excess items of work executed up to March 2015.

We observed that no justification was on record for the action of R&B Department to invite (September 2010) tender and award (January 2011) the work even after knowing in February 2010 that Education Department was taking action for changing the proposed site at Khamdhrol to Khadiya. Further, EE had also carried out (December 2010 to January 2011) the soil bearing capacity (SBC) test through an agency at Khadiya. Instead of analysing the SBC test report of new site and assessing the possible changes in design and the likely increase in the tendered cost of the building, EE issued (February 2011) the work order and allowed the contractor to start the work in the changed site at Khadiya.

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[21] Tendered cost ₹ 15.94 crore + Excess items ₹ 19.19 crore + Extra items ₹ 3.58 crore (-) savings ₹ 2.46 crore (-) diff. in estimates ₹ 0.11 crore = ₹ 36.14 crore.

[22] As per tender condition, for the quantities executed in excess of 30 *per cent* of the tendered quantities of work, payments shall be made as per the rates entered in the Schedule of Rates (SoR) of the year during which the excess quantities were first executed, irrespective of the tendered rates.

[23] On the 31 items avoidable payment of ₹ 4.55 crore *less* on 3 items savings of ₹ 0.10 crore.

If the R&B Department had invited fresh tender after the allotment of land at Khadiya and after duly considering the SBC test report, it could have got the opportunity of awarding the work at competitive price and could have also avoided incurring of any extra expenditure by way of awarding excess/ extra items of work.

The matter was reported to the Department in January 2015; their reply was awaited (September 2015).

3.8 Excess payment

Non-adherence to the tender conditions relating to the payment of service tax led to double payment of service tax amounting to ₹ 6 lakh.

The Executive Engineer, Roads and Buildings (R&B) Division, Kheda (Nadiad) of R&B Department invited tender for fixing of unit rates and agencies for conducting various types of engineering tests. The Division invited tenders by calling rates **inclusive of all taxes**. The R&B Department approved (October 2012) the unit rates of various engineering tests through 38 private laboratories.

We conducted test check of illustrative bills of selected months relating to payment of testing charges to the laboratories in the four R&B Divisions[24] for which work orders were issued to the laboratories for conducting tests. We observed that work order condition stipulated that rates approved are inclusive of all taxes *such as* service tax *etc.* However, laboratories submitted the bills claiming the service tax over and above approved rates and the Divisions also paid bills. This indicates that service tax payment was made twice to the laboratories leading to extra expenditure to the Government to the extent of ₹ 6 lakh as detailed in **Table 8** below:

Table 8: Details showing excess payment of service tax

(₹ in lakh)

Name of the Division	No. of laboratories	No. of bills	Amount of bills	Service tax charged separately
EE, R&B Division (District), Ahmedabad	7	126	24.88	2.71
EE, R&B Division, Godhra	2	47	13.31	1.45
EE, R&B Division, Mehsana	2	11	5.64	0.62
EE, R&B Division (District), Vadodara	1	63	10.50	1.22
Total			**54.33**	**6.00**

The EEs accepted the facts and stated that recovery of excess payment of service tax would be made from the laboratories. Recovery particulars if any, from the EEs are awaited (September 2015).

[24] EEs, R&B Divisions (District) Ahmedabad, Godhra, Mehsana and (District) Vadodara.

Government may consider inviting rates exclusive of taxes for providing service to avoid double payment of service tax.

INDUSTRIES & MINES AND FINANCE DEPARTMENTS

3.9 Excess payment

Non-adherence to the tender conditions relating to the payment of service tax led to double payment of service tax amounting to ₹ 22.15 lakh.

The Commissioner of Geology and Mining (under Industries and Mines Department) invited tenders for hiring of vehicles (April 2011) with condition that the rate quoted for price bid should in no case be the conditional offer and **the offer must include** all charges like diesel cost, driver, maintenance, road passing, RTO, insurance and **other charges/ taxes/ duties associated with running of vehicle**. Further, during the period of contract, if any new tax is imposed by the Government, same shall be reimbursed by Chief General Manager (CGM). The lowest offer was received from M/s. Tourist Travels, Gandhinagar and he agreed (May 2011) with the conditions mentioned in the price bid. Thus, price accepted by the Commissioner was **inclusive of all taxes**. The Commissioner awarded (May 2011) work to M/s. Tourist Travels, Gandhinagar for a period of two years effective from 1 June 2011. The period of service was extended (May 2013) up to July 2014. During the period from June 2011 to July 2014, the Department paid service tax of ₹ 22.15 lakh.

During post audit of vouchers passed by the Pay and Accounts Officer (PAO) at Resident Audit Office, Gandhinagar, we observed that the contractor submitted bills by charging monthly minimum accepted rates for 2,500 or 3,000 km *per* vehicle, rate difference and charges for excess usage km as per accepted *per* km rate plus service tax on all above charges. Though the rates of M/s. Tourist Travels accepted by the Department were **inclusive of all taxes *such as* service tax**, they had charged service tax again on gross amount of the bills. This led to excess payment of service tax amounting to ₹ 22.15 lakh to the contractor.

The CGM stated (August 2015) that Department has misinterpreted the condition of the tender and made excess payment of service tax to the contractor. Therefore, it was decided to recover the said amount from the contractor and progress report would be submitted later on.

Government may consider inviting rates exclusive of taxes for providing service to avoid double payment of service tax.

FORESTS AND ENVIRONMENT DEPARTMENT

3.10 Functioning of Common Effluent Treatment Plants

3.10.1 Introduction

According to Water (Prevention and Control of Pollution) Act, 1974, every industry has to provide adequate treatment of its effluents before disposal, irrespective of whether it is in stream, land, sewerage system or sea. Small-scale industries (SSIs) have a very important role in overall industrial development in India and growth of SSI units has been actively promoted by Government of India to induce balanced economic growth and to distribute the benefits of industrial development in an equitable manner.

Often the small scale industries (SSIs), due to their limited size and scale of operations, do not find it economically viable to install elaborate pollution control equipments. It is difficult for each industrial unit to provide and operate individual wastewater treatment plant because of the scale of operations or lack of space or technical manpower. However, the quantum of pollutants emitted by SSIs clusters may be more than an equivalent large scale industry, since the specific rate of generation of pollutants is generally higher because of the less efficient production technologies adopted by SSIs.

Keeping in view the key role played by SSI units and the constraints in complying with pollution control norms individually by these units, the Ministry of Environment and Forests (MoEF) initiated (1991) an innovative technical and financial support scheme along with State Government contribution *viz.*, Common Effluent Treatment Plant (CETP) scheme to ensure the growth of SSI units in an environmentally compatible manner. The scheme promoted common facilities for treatment of effluents generated from SSI units located in clusters through liberal financial assistance.

Under the Scheme, GoI assistance is restricted to 50 *per cent* of the project cost subject to ceiling limit of ₹ 20 crore for project without Zero Liquid Discharge (ZLD)[25] and ₹ 40 crore for project with provision of ZLD. The GoI funding is also restricted to ₹ 1.50 crore *per* Million Litre *per* Day (MLD) for CETP project without ZLD. The State Government share shall be 25 *per cent* of the total project cost and the project proponent's contribution shall be 25 *per cent*. The financial assistance under the scheme was further extended (June 2009) for up gradation/ modernisation of CETPs.

The concept of CETP was adopted as a way to achieve 'end-of-pipe treatment' of combined waste water at lower unit cost than that could be achieved by individual industry. It would facilitate discharge, monitoring and enforcement by Environment Regulatory Agencies. The investment of substantial Government finance in the CETP schemes was justified on the basis of potential benefits in terms of pollution reduction and environment improvement.

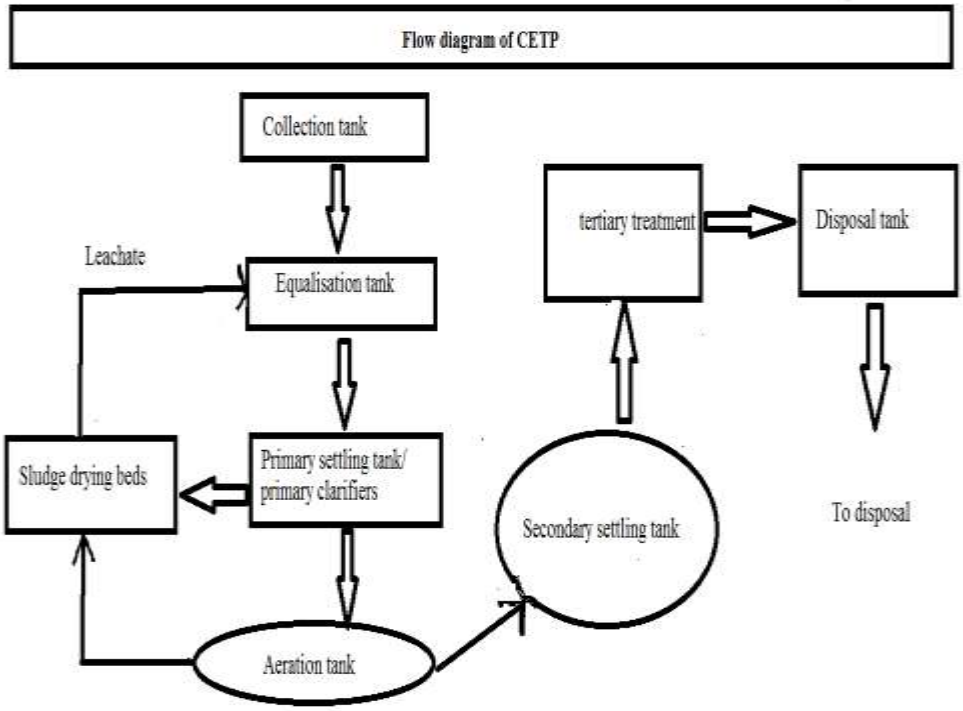
[25] ZLD systems employ the most advanced wastewater treatment technologies to purify and recycle virtually all of the wastewater for its reuse.

In Gujarat, the Gujarat Pollution Control Board (GPCB) is responsible for monitoring the functioning of CETPs. The GPCB grants Consolidated Consent and Authorisation (CC&A) for operation of CETP in which outlet norms have to be complied during their functioning on regular basis. GPCB monitors this and other environmental law through its 26 Regional Offices (ROs) in the State. The officials of RO visit the CETP every month and take samples which are being analysed in laboratory of GPCB.

3.10.2 Process details of CETP

The diagram showing the process of CETP is given in **Figure 4** below:

Figure 4: Flow diagram showing process of CETP



The conventional CETP consists of physical, chemical and biological treatment plant. The process of industrial waste water/ effluent received from the various industries of the area through underground pipeline or close/ open channel or through tanker undergoes primary, secondary and tertiary treatment before the final disposal of effluent in the stream as shown in the diagram above. The treatment results in maximum removal of Chemical Oxygen Demand (COD) and Biological Oxygen Demand (BOD) load of effluent.

3.10.3 Conditions of Consolidated Consent and Authorisation

The GPCB grants consent to CETP in the form of Consolidated Consent and Authorisation (CC&A) which *inter alia* include the following conditions for functioning of CETP:

- Outlet norms for treated effluent;
- Conduct the Bio-assay test[26] for ascertaining the survival rate of fish;
- Construction of Storage tank/ Guard Pond[27];
- Development of Green belt;
- Implementation of community welfare schemes in the area adjoining the CETP; and
- Disposal of hazardous waste to Treatment Storage and Disposal Facility (TSDF) site.

3.10.4 Financial Assistance to CETPs

The GoI sanctioned subsidy of ₹ 70.59 crore during the year 2012-13 to 2014-15 for establishment of two CETPs *namely* Bhatgam Washing Ghat Suddhikaran Yojna Private Limited, Junagadh and New Palsana Industrial Co-operative Society, Surat and for upgradation of four CETPs *namely* (i) Palsana Enviro Protection Limited, Surat, (ii) The Green Environment Services Co-operative Society Limited, Vatva, (iii) Vapi Waste & Effluent Management Company Limited, Vapi and (iv) Narmada Clean Tech Limited, Ankleshwar.

Similarly, State Government also sanctioned subsidy of ₹ 141.72 crore[28] during the year 2012-13 to 2014-15 to the eight CETPs for the establishment and up-gradation of CETPs.

3.10.5 Audit Coverage

There are 37 CETPs in the State as given in **Appendix VIII**, of which 33 CETPs are operational and four were either proposed or at commissioning/ construction stage (May 2015). Out of 33 completed CETPs, region wise 12 CETPs[29] based on their capacity were selected for detailed scrutiny. We examined (January 2015 to April 2015) records of Gujarat Pollution Control Board (GPCB), Gandhinagar, and the selected CETPs along with concerned seven[30] ROs for the period from April 2012 to March 2015.

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26 Bio assay test is conducted to ascertain the survival rate of fish.

27 In case of maintenance of CETP or process disturbances, CETP as well as member units should provide impervious acid proof bricks lining tanks/ HDPE tanks/ impervious guard ponds to hold effluent for at least 48 hours.

28 It also includes the State assistance to CETPs under other schemes, Environment protection measures and infrastructure scheme.

29 (i) Nandesari Industrial Association (NIA), Vadodara, (ii) Veraval Industrial Association (VIA), Veraval, (iii) Final ETP of Narmada Clean Tech Limited (NCTL), Ankleshwar, (iv) Enviro Technology Limited (ETL), Ankleshwar, (v) Panoli Enviro Technology Limited (PETL), Panoli, (vi) Green Environment Services Co-operative Society Limited (GESCSL), Ahmedabad, (vii) Odhav Enviro Project Limited (OEPL), Ahmedabad, (viii) Naroda Enviro Project Limited (NEPL), Ahmedabad, (ix) Jetpur Dying & Printing Association (JDPA), Jetpur, (x) Vapi Waste & Effluent Management Company Limited (VWEMCL), (xi) Pandesara Infrastructure Limited (PIL), Surat and (xii) Sachin Infra Environment Limited (SIEL), Surat.

30 Surat, Vapi, Ankleshwar, Ahmedabad (East), Jetpur, Junagadh and Vadodara.

3.10.6 Functioning of CETPs

3.10.6.1 Achievement of outlet norms for treated effluent

The treated effluent of CETP should meet the outlet norms stipulated in CC&A. The compliances of norms by CETPs are being regularly monitored by GPCB. The officials of ROs visit the CETP every month and take samples which are analysed in laboratory of GPCB.

During April 2012 to March 2015, GPCB carried out laboratory analysis of the samples ranging from 30 to 114 taken from the 12 CETPs test-checked in Audit to determine the compliances made by the CETPs to the outlet norms specified for the treated effluent. The details of standard outlet norms of GPCB to CETPs for discharging the treated effluent are given in **Appendix IX** and the number of samples outside the norms with range and the percentage of samples outside the norms are given in the **Appendix X**.

We observed (between January and May 2015) from the data of analysis report that except outlet norms fixed for pH, in case of the remaining important outlet norms *viz.*, Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD), Total Suspended Solid (TSS), Total Dissolve Solid (TDS), Chlorides and Ammonical Nitrogen (NH_3-N) *etc.*, none of the CETP test-checked in Audit discharged their treated effluent as per the norms of GPCB as shown in the **Table 9** below:

Table 9: Statement showing the non-compliance to the prescribed norms

Name of CETP	Total no. of months in which sample taken	Total no. of Sample	No. of samples failed/ not met as per norms					
			COD	BOD	TSS	NH_3-N	TDS	Chloride
NIA	35	43	30	25	30	2	41	41
VIA	25	31	19	17	21	19	NA	NA
NCTL	31	50	49	21	10	39	NA	NA
ETL	29	43	43	37	9	1	43	43
PETL	34	50	50	50	24	22	50	50
GESCSL	29	44	44	44	42	28	44	NA
OEPL	29	30	24	30	7	4	30	29
NEPL	28	40	40	40	34	28	40	40
JDPA	34	43	12	11	25	0	43	42
VWEMCL	34	114	106	87	93	25	95	81
SIEL	32	41	39	39	25	0	41	41
PIL	28	33	32	33	21	0	33	33

NA: No outlet norms for TDS and Chloride were fixed in VIA, Veraval and NCTL, Ankleshwar. In case of GESCSL, Ahmedabad no outlet norms were fixed for Chloride.

The extent of compliance of each outlet norms by the test-checked CETPs is discussed below by way of samples falling outside the outlet norms specified during the period under audit.

- **COD**: All selected CETPs were not meeting the norms which ranged from 28 *per cent* to 100 *per cent*. The failure rate was over 75 *per cent* in nine CETPs.

- **BOD**: CETPs were not meeting the norms which ranged from 26 *per cent* to 100 *per cent*. The failure rate was over 75 *per cent* in eight CETPs.
- **TSS**: CETPs were not meeting the norms which ranged from 20 *per cent* to 95 *per cent*. The failure rate was under 25 *per cent* in three CETPs whereas it was over 75 *per cent* in three CETPs.
- **NH_3-N**: Out of 12, nine CETPs were not meeting the norms which ranged from two *per cent* to 78 *per cent*. The failure rate was under 25 *per cent* in four CETPs whereas it was over 75 *per cent* in one CETP.
- **TDS**: 10 CETPs were not meeting the norms which ranged between 83 *per cent* and 100 *per cent*. The failure rate was over 75 *per cent* in all 10 CETPs.
- **Chloride**: Nine CETPs were not meeting the norms which ranged from 71 *per cent* to 100 *per cent*. The failure rate was over 75 *per cent* in eight CETPs.

As discussed above, none of the CETPs discharged their effluents as per the prescribed norms by the GPCB and wide variations were also noticed in the performance of CETPs. Though the ROs regularly reported to the CETPs about their non-compliances to the norms, the follow up mechanism with the GPCB is not effective to ensure prompt compliances by CETPs.

The Government stated (August 2015) that non-attainment of the outlet norms can be attributed to mainly two reasons. First at the entry point, the inlet effluents to CETPs discharged by the members of CETPs were not treated at source as per designed norms. Second, the technology limitation of the CETPs to achieve the outlet norms. For the control of the inlet norms, the members of CETPs were being persuaded to segregate the concentrated stream at source. Further, to overcome technology limitation, GPCB had been pursuing the CETPs to upgrade their treatment system. GPCB also instructed (August 2015) the operator of all CETPs to submit time bound action plan for reduction of COD up to 250 mg/l as specified in the CC&A.

The fact, however, remains that ineffective treatment at CETPs and ineffective pursuance by GPCB resulted in pollution of natural water bodies into which these effluents were discharged.

3.10.6.2 Conduct of Bio-assay test

Condition of CC&A in seven CETPs provides that Bio-assay test is to be conducted on regular basis. Bio-assay test is to be conducted from treated effluent sample drawn from final disposal tank of CETP before disposal of effluent, to ascertain the survival rate of fish. This is to ascertain whether there is 90 *per cent* survival of fish after its dipping in final disposal tank for 96 hours.

We observed (between January and May 2015) that five CETPs *viz.,* NCTL, PETL, NEPL, GESCOSL and NIA have not conducted the required Bio-assay test. The ROs have not furnished information for ETL and VWEMCL. Thus, condition of CC&A was not complied with by the CETPs. As a result, it could

not be ascertained whether treated waste water discharged into water bodies was harmful to aquatic biota or not (April 2015).

We also observed (March 2015) that Bio-assay test conducted in the year 2013 through National Environmental Engineering Research Institution (NEERI)[31] at CETP of NCTL stated that due to non-fulfilment of outlet norms, all fish died within 72 hours at 40 *per cent* concentration and above. However, no corrective action was taken by GPCB after NEERI report. After we pointed out in audit, Government stated (August 2015) that GPCB issued instructions to the CETPs to provide in house facility to conduct Bio-assay test on regular basis.

3.10.6.3 Construction of storage tank/ guard pond and capacity enhancement

As per GPCB Technical Manual Volume II and the specific condition contained in CC&A of CETP, when a CETP was under maintenance or there were process disturbances, CETP as well as member units should provide impervious acid proof bricks lining tanks/ HDPE tanks/ impervious guard ponds to hold effluent for at least 48 hours but shall never discharge any untreated effluent into the Environment.

We observed that Seven CETPs[32] had not constructed the storage tank/ guard pond (April 2015). Further in CETP of NIA, Vadodara established in 1984, no such condition for construction of storage tank/ guard pond was stipulated as effluent was received through tanker. Thus, these CETPs had not taken care of the basic needs to hold the effluent when CETP was under maintenance or process disturbances. In case of emergency, ROs intimated (April/ May 2015) that all the member units were informed through group SMS and phone to stop production activities immediately.

The Government stated (August 2015) that CETPs were instructed either to make provision for storage of effluent at CETPs or with their member unit or to develop mechanism to stop discharging by their member units in case of any emergency/ maintenance taken by CETPs.

Further, it is pertinent to mention that a complaint was lodged (February 2015) by Sarpanch of village Priraman that around five million litre brown colour effluent was discharged by CETP of NCTL in natural creak, Amlakhadi due to excessive flow of inlet effluent. After this, GPCB issued (February 2015) closure notice to NCTL. The GPCB revoked (March 2015) the notice with condition that NCTL would construct guard pond of additional 20 MLD Capacity.

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[31] The National Environmental Engineering Research Institute (NEERI) is a research institute created and funded by Government of India and falls under the Ministry of Science and Technology (India) of Central Government. NEERI is a pioneer laboratory in the field of environmental science and engineering and part of Council of Scientific and Industrial Research (CSIR).

[32] (i) VWEMCL, Vapi (ii) GESCSL, Ahmedabad, (iii) OEPL, Ahmedabad, (iv) NEPL, Ahmedabad, (v) VIA, Veraval, (vi) SIEL, Surat and (vii) PIL, Surat.

Thus, in view of such incident, the CETPs are required to take the norms regarding the construction of storage tank/ guard pond and capacity enhancement seriously and initiate prompt action without waiting for exigency to occur.

3.10.6.4 Development/ partial development of green belt

For the abatement of noise and air pollution, plantation activity is included in general condition of Consent to Establish *i.e.,* NOC of Technical Manual Volume II of GPCB. According to this, the CEPT unit should develop green belt within premises, a spacing of at least 4 metre (m) × 4 m should be kept *i.e.,* 250 plants *per* acre should be planted. Further, as per the NOC condition, adequate plantation should also be carried out all along the periphery of the industry premises/ complex in such a way that density of plantation is at least 1,000 trees *per* acre of land and green belt of 10/ 20/ 30 m width developed. Plantation should be started along with construction activity.

If adequate land is not available within premises, unit should tie up with local agencies like Gram Panchayat, school, social forestry office *etc.*, for plantation at suitable open land in nearby locality. In such cases of open land, a spacing of 2 m × 2 m will be kept *i.e.,* 1,000 plants *per* acre and for this the CETP should submit an action plan of plantation for next three years to GPCB.

We observed during the site visit (3 March 2015 to 6 April 2015) of test checked CETPs that NCTL, Ankleshwar and JDPA, Jetpur had carried out sufficient plantation and created good green belt. However, in the remaining 10 CETPs, the plantation to develop green belts was done in five CETPs but was not in 10 m width along the periphery of CETPs as per prescribed norms and in other five CETP[33], very few trees were planted within the premises which were not as per norms.

The Government stated (August 2015) that all CETPs were instructed to develop green belt in surrounding areas like school or other public place or road side of the estate. NEPL had developed green belt naming it as "Paryavaran Mandir" and due to constraint of land within CETPs, many CETPs have developed green belt elsewhere within their estates.

Even though the plantation activity should start with construction of CETP, GPCB did not properly monitor the plantation carried out by CETPs.

3.10.6.5 Implementation of Community welfare scheme

According to the condition of CC&A, a Community Welfare Scheme (CWS) for improving the socio economic environment of the surrounding area should be worked out and report is to be submitted to GPCB/ Government for review.

We observed (between January 2015 and April 2015) that none of the CETPs had introduced a CWS for improving the socio economic environment of surrounding area. However, at the instance of audit, ROs collected the details

[33] (i) OEPL, Ahmedabad, (ii) NEPL, Ahmedabad, (iii) VIA, Veraval, (iv) NIA, Vadodara and (v) PETL, Ankleshwar.

regarding the welfare activities carried out by CETPs during April 2012 to March 2015 as shown in **Table 10** below:

Table 10: Details showing the welfare activities carried out by CETPs

Sl. No.	Name of CETP	Welfare activities carried out
1	JDPA, Jetpur	Supply of drinking water to farmers, supply of ambulance and firefighting equipments to Jetpur Nagarpalika and Installed Electric Crematorium.
2	SIEL, Surat	Donated fund to various trusts, organised seminar on some topics.
3	PIL, Surat	Donated fund for street/ road light.
4	NCTL, Ankleshwar	Donated fund to trust, advertisement of waste water management, CC approach road, Solar light, high mast to Nagarpalika.
5	ETL, Ankleshwar	Donated fund for sports complex development, seva rural scheme, Education mobile van, UPL Rotary library, sponsorship for tribal student for technical education.

As may be seen from the above, though no concrete CWS was worked out by the CETPs as stipulated in the CC&A, individual CETPs had occasionally taken up welfare activities in an unplanned manner. Further, there was no time limit prescribed for submission of report regarding CWS in CC&A and no monitoring mechanism exists with GPCB for compilation of data and review of CWS activities carried out by the CETPs.

The Government stated (August 2015) that most of the CETPs carried out community welfare activities. However they were not submitting the details of the scheme being implemented by them to the GPCB. However, all CETPs are instructed to submit details of community scheme to be taken for each financial year to GPCB so that progress on the implementation of the scheme could be monitored.

3.10.6.6 Disposal of Hazardous waste

According to condition of CC&A read with Rule 7 of the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2008, the occupiers, recyclers, re-processors, re-users and operator of facilities may store the hazardous waste[34] for a period not exceeding 90 days and shall maintain a record of sale, transfer, storage, *etc* of such waste and make these records available for inspection. However, the State Pollution Control Board may extend the said period in certain cases as stipulated in the said Rules.

We observed (between January and April 2015) from the Environment Audit Reports of CETPs and also during site visit of CETPs that Seven out of 12 CETPs were not disposing the sludge lying at site by sending to Treatment, Storage and Disposal Facility (TSDF) site as shown in the **Table 11** below:

[34] Any substance or preparation which, by reason of its chemical or physical-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plant, mirco-organism, property or the environment.

Table 11: Details showing the quantity of sludge lying on CETP site

Name of the CETP	Date of Environment Audit Report	Quantity of sludge lying on CETP site for disposal (in MT)	Period during which sludge got accumulated
VIA, Veraval	24.01.2015	3.98	July to December 2014
PETL, Ankleshwar	28.01.2015	744	April 2012 to April 2015
GESCSL, Ahmedabad	26.02.2015	8,834.21	July to December 2014
OEPL, Ahmedabad	23.01.2015	331.71	July to December 2014
NEPL, Ahmedabad	2.02.2015	590	July to December 2014
VWEMCL, Vapi	5.02.2015	55,471.42	July to December 2014
SIEL, Surat	28.01.2015	1,050.95	January to December 2014

(Source: Environment Audit Reports and reply furnished by RO, Ankleshwar)

We further observed that GPCB issued (August 2014) a legal notice to the VWEMCL, Vapi for non-disposal of sludge. However, no action had been taken by the CETP (February 2015). The GPCB also issued a closure notice (December 2014) to the CETP under Section 33A of Water (Prevention and Control of Pollution) Act, 1974. The closure notice was revoked twice in January 2015 and July 2015 by GPCB for three months and six months respectively. As informed (August 2015) by GPCB, 65,000 MT (approximate) sludge was lying at CETP site as of June 2015.

The sludge lying at the CETP site during audit visit on 09 February 2015 is shown in the photograph given below:

Figure 5: Photograph showing the sludge lying at CETP site of VWEMCL, Vapi

The Government stated (August 2015) that seven common TSDF sites were developed for disposal of hazardous waste generated by industries as well as CETPs. The land sites of Vatva and Naroda at Ahmedabad were exhausted and Vapi TSDF site closed down due to accident in July 2012 which led to accumulation of hazardous waste at CETP sites. To cope with the situation, GPCB persuaded with the concerned industries associations for development of new TSDF sites. The new TSDF sites are in advance stage for Vapi, Ahmedabad area, Dahej and Vadodara. Once these sites become functional, issue of disposal of hazardous waste would be resolved.

The reply of the Government is to be seen in the light that GPCB inspects TSDF sites regularly and they should take immediate step prior to exhaust of landfill site to avoid accumulation of sludge at CETP sites. This indicates that GPCB has not coordinated with the Industries/ TSDF organiser to develop TSDF site to dispose the sludge. The non-disposal of sludge to designated engineering landfill site leads to polluting the ground water as well as soil of surrounding area.

3.10.7 Other findings

3.10.7.1 Adherence of CC&A conditions

(a) As per specific condition No. 7.3 of CC&A, the CETP *i.e.*, JDPA, Jetpur is responsible for collection of effluent from their member unit and transportation of effluent by tankers/ through underground drainage system to CETP.

We observed (April 2015) during site visit that effluent from the member units along with the sewage of the municipality was collected in a sump constructed in the river bed through open drainage network system parallel to river. Then it was pumped to CETP for treatment. Due to leakage/ overflow of drainage systems, untreated effluent flowed into the river contaminating the river water. The GPCB stated (May 2015) that notice was issued under Section 33A of Water (Prevention and Control of Pollution) Act 1974, to the Nagarpalika, Jetpur for keeping the conveyance system clean.

The Government stated (August 2015) that the laying of separate sewage pipeline for Nagarpalika, Jetpur was being carried out and would be completed in three years. Further, JDPA has also committed to lay down separate conveyance of industrial effluent towards sump at pumping station after completion of sewage pipeline network of Nagarpalika, Jetpur.

Audit recommends that works of pipe line system for conveyance of effluent to CETP and municipal sewage may be expedited so as to avoid pollution of the river.

(b) As per the specific condition No. 47 of CC&A, CETP of JDPA shall have to submit study report from recognised University regarding the effect of waste water on the irrigation land. Environment Auditor (appointed by the CETP from the approved panel of auditors by the GPCB) in his report (July 2014 to December 2014) mentioned that treated effluent of CETP of JDPA was being used for irrigating 1,500 acres of agricultural land. Despite this, the study on impact of waste water on irrigation land was not carried out through recognised University by the CETP (April 2015).

The Government after accepting the fact stated (August 2015) that JDPA has entrusted study to Junagadh Agriculture University on 13 August 2015.

3.10.8 Conclusion and Recommendations

In the present era of rapid industrialisation and urbanisation, the CETPs play vital role to treat the effluent before being let into water bodies or for reuse. The monitoring of the functioning of CETPs regarding their adherence to the norms becomes a challenge to every Government to protect the environment. Thus, the role of GPCB assumes importance. The selected CETPs did not adhere to outlet norms in discharging effluents. There was non-disposal of hazardous waste timely leading to the pollution of natural water bodies into which these effluents were discharged and polluting the ground water as well as soil of surrounding area. The monitoring mechanism of GPCB/ ROs was ineffective in pursuance of CC&A conditions with CETPs in relation to the conducting of Bio-assay test and development of green belt in premises of CETPs *etc*.

- **GPCB/ RO need to revamp the existing monitoring and follow-up system and initiate effective pursuance and compliance in functioning of the CETPs to adhere the outlet norms.**
- **GPCB/ RO may regularly review proper adherence to CC&A conditions by all CETPs relating to conduct of bio-assay tests, development of green belt and disposal of hazardous waste.**

FORESTS & ENVIRONMENT AND INDUSTRIES & MINES DEPARTMENTS

3.11 Development of Balasinor Dinosaur Park

Lack of planning and monitoring of the project led to non-fulfillment of the envisaged goals after investment of ₹ 8.58 crore and after lapse of 33 years from the discovery of the site in 1981.

The Geological Survey of India (GSI) discovered a rich collection of Dinosaur bones and egg hatcheries with around 100 eggs and other remains at Village Raiyoli, Taluka Balasinor, District Kheda in the year 1981-82 in the declared (February 1975) reserved forest land. The site was declared as the third best Dinosaur site and the world's largest eggs hatchery site with home to seven different types of dinosaurs. Considering the importance of the site, GSI had proposed (1988) for the preservation of area as Dinosaur Fossil park. It recommended for protection and development of the site by undertaking fencing, preservation of the fossils, research on Dinosaurs, development of a Museum, on site lab, model park *etc*.

A meeting was held (October 1998) under chairmanship of Commissioner of Geology and Mining (CGM) in the Industries and Mines Department to discuss the protection of the area and it was decided that as the area fell in reserved forest land, Forests and Environment (F&E) Department would be the implementing agency to protect and develop the area. The CGM was to take up the proposal with Government for funds relating to project implementation. The Industries and Mines Department constituted (June 2000) a committee to develop the Park. For development of tourism, the F&E Department was to carry out development activities from the plan

prepared by the Architect, who was deployed by the Tourism Corporation of Gujarat Limited (TCGL). Government of India sanctioned ₹ 3.55 crore to the tourism Department for development of the park (May 2005). State Government had also provided ₹ 5.11 crore to TCGL for the purpose. Out of this, an expenditure of ₹ 2.33 crore was incurred by the F&E Department (April 2014) and TCGL incurred expenditure of ₹ 6.25 crore (August 2014). Expenditure of TCGL includes construction of museum on land outside reserved forest land at a cost of ₹ 5.77 crore, consultancy (₹ 0.30 crore) and others (₹ 0.18 crore).

The observations noticed (July 2014) during scrutiny of records of Deputy Conservator of Forests (DCF), Nadiad, TCGL, site visit of the fossil park and Museum are discussed in two parts *i.e.,* development and conservation of fossil park by DCF, Nadiad and development of tourism by TCGL:

Development and conservation of the fossil park by F&E Department

- The GSI recommended (1997) excavation of the sites and its survey to collect more fossils as it has a great potential because many fossils in partly exposed position were also found. However, excavation was not carried out by the Forests Department. Even survey of the site for collecting scattered parts, its proper removal and conservation was not done (June 2015). Thus, the prized heritage was left to possible damage due to human vandalism and theft.

Figure 6: Photograph showing Remains of Dinosaur's skull and skin fossil lying uncovered and unprotected at the site

Remains of Dinosaur's skull (Photograph taken on 22 July 2014)

Unprotected skin fossil (Photograph taken on 22 July 2014)

- A large number of fossils available at the site may provide vital information to the scientists and help in revealing many unknown facts about dinosaurs. These fossils need to be excavated scientifically from the earth and studied in laboratories. However, there was no research on fossils. Further, some samples were sent by GSI (period not available on record) to Jaipur laboratory for analysis but report was not available on record (June 2014).

- The entire site comprises of two parts *viz.*, bones samples site and eggs hatcheries site. The fencing work has been completed (March 2014) at a cost of ₹ 1.59 crore by the DCF for bones sample site but eggs hatcheries site remain unfenced (March 2015). The F&E Department was not having inventory of various fossils (buried/ half exposed/ loose) lying at the site and no photo documentation of fossils was prepared since their discovery. Hence, nothing could be known about the parts of fossils taken away by researchers for study and/ or theft by common people *etc*.

- F&E Department has not framed guidelines for protection of these fossils at the time of opening of the site for public viewing. The visitors were allowed to go all over the site without any restriction and could even touch the fossils. For educating the visitors of the unique heritage, description boards/ displays should have been erected for awareness of visitors. But no such arrangement is available. There were only two guards posted at entry and no guard was provided inside the site. Thus, the F&E Department did not take enough measures to prevent possible vandalism of fossils by visitors.

- Guides should be deployed for benefit of visitors, however, no such arrangement is available. The proposal for posting of guides was submitted (July 2011) by the DCF to the Principal Chief Conservator of Forests (PCCF) which has not been approved till date (June 2015), for which no reasons were available on record.

Figure 7: Photograph of Dinosaur fossils for which no display or guides provided

	
Dinosaur Spine ***(Photograph taken on 22 July 2014)***	***Dinosaur Skin*** ***(Photograph taken on 22 July 2014)***

Development of tourism facilities by TCGL

The Dinosaur Fossil site has potential to attract tourism from all over the world. It will have a tremendous impact on the socio economic condition of the people of surrounding villages as well as whole region.

- Therefore, to develop the site, the work of construction of museum building was awarded (July 2006) by the TCGL at a cost of ₹ 4.50 crore with stipulated completion by April 2007. The work was completed in November 2011 at a cost of ₹ 5.77 crore. Dinosaur Fossil Park Development Society was also constituted (May 2013) to make the museum operational. However, the museum building was not put to use (March 2015) since various activities *like* audio visual, sound and light show and interactive display including orientation programme *etc.*, were not arranged by TCGL. TCGL also incurred an expenditure of ₹ 0.48 crore on consultancy for developing tourist site, security and electric bill up to March 2014. Thus, due to non-providing of facilities in the constructed museum, development in tourism area could not be achieved.

Figure 8: Museum not open

- In order to mark the importance of Dinosaur Park, the Department of Posts (DoP) released special cover stamp depicting Balasinor as World's largest dinosaur egg hatchery (December 2009). Further, Declaration of a site by UNESCO as Geopark[35] or World Heritage Site[36] attracts visitors all over the world, gives boost to tourism and helps local economy to prosper. It also helps Government to generate funds for development and systematic maintenance of the site. The GSI for the purpose of recommending the site for Geopark, requested TCGL and GEER to provide certain details for which response was awaited. Also, no action was taken by the State Government to propose this site for World Heritage Site.

Figure 9: Stamp released by DoP

The Government stated (October 2014) that as fossils were over 6.5 crore years old, now there was least possibility for more damages to it. The complete fencing of the site could not be done for want of funds. However, the F&E Department had outsourced security agency and six guards were posted to provide security to park.

The Government reply is not convincing as fencing of the entire site was required for safeguarding the fossils against theft, vandalism *etc.* There was no preservation of the fossils, no research on Dinosaurs and little generation of tourism and spreading of knowledge as only 2,284 visitors visited the site during the period 2009-10 to 2013-14. Further, the Government did not prepare any reports on excavation and research on the site, guidelines for

[35] An area where outstanding and rare geological landforms are preserved in an undisturbed state. It helps to pursue scientific research, educational activities, low-impact recreation along with preservation of the rare geological features.

[36] UNESCO declares a site which has extraordinary universal values as the UNESCO World Heritage Site from countries all over the world. On receipt of nomination of a site, after long screening and thorough examination of the site, UNESCO, if found fit, declares such site as World Heritage Site.

visitors, list of inventory and sending proposal for World Heritage/ UNESCO Geopark. Thus, after incurring an expenditure of ₹ 8.58 crore, none of the goals envisaged in the recommendation of GSI could be fulfilled even after 33 years of discovery of the site. Further, the opportunity to develop tourism at the site and thereby enhance the socio economic condition of people of the surrounding area was missed.

(Y. N. THAKARE)
Ahmedabad **Principal Accountant General**
The 10 FEBRUARY 2016 **(Economic & Revenue Sector Audit) Gujarat**

Countersigned

New Delhi **(SHASHI KANT SHARMA)**
The 11 FEBRUARY 2016 **Comptroller and Auditor General of India**