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**Texas Commission on Environmental Quality**

**CHECKLIST WORKSHEET**

IHW RCRA INTERIM STATUS CME GROUNDWATER CHECKLIST 2

Reg Ent Name :

Date:

Add ID:

Investigator Name:

Item No	Description	Answer	Citations	Notes
	GROUNDWATER MONITORING SYSTEM (Interim Status)			
	SECTION A: INTRODUCTION			
1	RCRA Ground-Water Monitoring Status: Complete the table for each RCRA Waste Management Unit (WMU) (Attachment #).			
2	Do the locations of the monitoring wells on the site diagram(s) of the WMUs (Attachment #) compare with the locations of the wells spot-checked in the field?			
3	Site Location Map - (Attachment #) (indicate site location directly on map or reproduction).			
	SECTION B: MONITOR WELL SYSTEM REVIEW			
1	Changes to the RCRA Monitor Well System:			
A	Have any monitor wells been installed or replaced?			
A1	If wells have been installed or replaced has a copy of the well installation diagram including lithologic logs for each new well been submitted to the TCEQ? If not, copies of these are included as (Attachment #).			
B	Have any monitor wells been designated as inactive since the last CME/O&M (still in place but not being used)?			
B1	If YES, list:			
C	Have any monitor wells been removed/plugged?			
C1	If YES, has the plugging report been submitted to the TCEQ?			
C2	If YES, list and describe abandonment procedures:			
2	Field Observation of Monitor Wells:		335.163(1)(A)(ii) 335.112(a)(5) 335.163(1)(C) 335.163(3) 335.116(a) 265.91(c) 265.91(a) 265.90(a) 335.163(1)(A) 335.163(1) 335.163(1)(B)	
A	General condition around monitor wells:			
A1	Is access to the wells maintained?			
A2	Are there any indications of herbicide, pesticide, or other chemical use near the well that could influence the quality of samples?			
A3	Are there "bumper poles/protector pipes" around the well to prevent collision damage where necessary?			
B	Is the monitor well identification number clearly visible?			
C	Is the monitor well equipped with a cap capable of being locked?			

**CHECKLIST WORKSHEET**

**IHW RCRA INTERIM STATUS CME GROUNDWATER CHECKLIST 2 (Cont)**

C1	If not, are there other provisions for security of well?			
C2	If applicable, describe:			
D	Monitor Well Casing:			
D1	Is there an outer protective casing?			
D2	Is the casing in good condition?			
E	Monitor Well Surface Pad:			
E1	Does the monitor well have a surface pad?			
E2	Are there indications of surface water infiltration down the borehole annulus?			
E3	If YES, describe the Company's actions to correct this condition: (If applicable, document indications of damage to surface seal with photographs.)			
F	Are water level measuring points permanently marked on each RCRA well?			
G	Have water level measuring points been surveyed?			
G1	Date of most recent survey:			
H	Complete a Well Dimension Table for wells observed during this investigation. Attachment#).			
3	Verification of Groundwater flow directions and well placement			
A	Examine operator's records to make the following determinations:			
A1	For units in interim status detection monitoring, does the operator evaluate the Ground-Water flow direction in the uppermost aquifer on at least an annual basis to verify well placement?		335.112(a)(5) 335.164(5) 265.93(f)	
A2	For units in interim status assessment monitoring, does the operator determine, on a quarterly basis, the Groundwater flow direction in the uppermost aquifer for use in determining the rate and direction of migration of hazardous constituents?		265.93(d)(7) 335.112(a)(5)	
B	Are the monitor wells of the well system properly designated as to upgradient (or background) or downgradient/point of compliance relative to Ground-Water flow direction?			
C	Describe operator's actions to address apparent well location errors in response to 40 CFR 265.93(f).			
	<b>SECTION C: MONITORING SYSTEM COMPLIANCE WITH INTERIM STATUS RULES</b>			
1	Does the site have units/monitoring systems under Interim Status Detection Monitoring? (if NO, Section C question 1 is N/A):			
A	Upgradient/background monitor well(s)			
A1	Does the monitoring system consist of at least one upgradient well capable of yielding ground-water samples for analysis?		265.91(a)(1)(i) 265.91(a)(1)(ii) 335.112(a)(5) 265.91(a)(1)	
A2	List upgradient/background well(s) in CME Investigation as Attachment #.			
A3	Is number, location, and depth of the upgradient well(s) sufficient to yield ground-water samples that are representative of background ground-water quality in the uppermost aquifer and not affected by the facility?		335.112(a)(5) 265.91(a)(1)(i) 265.91(a)(1) 265.91(a)(1)(ii)	
B	Downgradient wells			
B1	Does the monitoring system consist of at least three downgradient wells installed at the limit of the WMU?		265.91(a)(2) 335.112(a)(5)	
B2	List downgradient wells in CME Investigation as Attachment #.			

**CHECKLIST WORKSHEET**

**IHW RCRA INTERIM STATUS CME GROUNDWATER CHECKLIST 2 (Cont)**

B3	Is number, locations, and depths of downgradient wells sufficient to ensure immediate detection of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the WMU to the uppermost aquifer?		335.112(a)(5) 265.92(a)(2)	
C	Are well casings screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exit?		265.91(c) 335.112(a)(5)	
D	Is the annular space above the sampling depth sealed with a suitable material (e.g., bentonite slurry) to prevent contamination of samples and the ground-water?		335.112(a)(5) 265.91(c)	
2	Interim Status Assessment Monitoring: Does the site have units/monitoring systems under Interim Status Assessment Monitoring? (If no units, Section C2 is N/A):			
A	Does the monitoring system allow the owner/operator to determine the rate and extent of migration of the hazardous waste and hazardous waste constituents in ground-water and the concentration of hazardous waste or hazardous waste constituents in ground-water?		265.93(d)(4)(i) 265.93(d)(4) 265.93(d)(4)(ii) 335.112(a)(5)	
B	List assessment monitoring parameters as Attachment # (analyzed on a quarterly basis):			
3	Has an enforcement order been issued to the facility that contains provisions or technical recommendations (TR) that address groundwater or groundwater monitoring?			
A	Is the facility compliant with all provisions of the enforcement order concerning ground-water monitoring, assessment and corrective action?			