



Linda S. Adams  
Secretary for  
Environmental Protection

# California Regional Water Quality Control Board Central Valley Region

Robert Schneider, Chair



Arnold  
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Governor

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30 June 2006

**CERTIFIED MAIL**  
**7001 2510 0004 1548 9180**

Tobe Goyette  
Syar Industries, Inc.  
P.O. Box 2540  
Napa, CA 94558

NOTICE OF ADOPTION  
OF  
REVISED WASTE DISCHARGE REQUIREMENTS ORDER  
FOR  
SYAR INDUSTRIES, INC.  
SYAR MADISON PLANT  
YOLO COUNTY

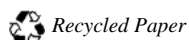
Waste Discharge Requirements (WDRs) Order No. R5-2006-0069 for the Syar Industries, Inc. Syar Madison Plant was adopted by the California Regional Water Quality Control Board, Central Valley Region, at its 23 June 2006 meeting.

Please note that the WDRs contain compliance schedules with specific timetables for submitting reports and conducting studies to the wastewater system. The first scheduled due date is **1 September 2006**, when you must submit a report and map defining all sampling locations and freeboard measuring points. In addition, the WDRs contain a Monitoring and Reporting Program (MRP), which contains specified monitoring requirements for you to implement. Please review the MRP closely so that you may establish the appropriate sampling schedules and protocols. A copy of the Order must be maintained at the facility and must be accessible to anyone operating the waste treatment system.

In order to conserve paper and reduce mailing costs, a paper copy of the order has been sent only to the Discharger. Interested parties are advised that the full text of this order is available on the Regional Board's web site at [http://www.swrcb.ca.gov/rwqcb5/adopted\\_orders](http://www.swrcb.ca.gov/rwqcb5/adopted_orders). Anyone without access to the Internet who needs a paper copy of the order can obtain one by calling Regional Board staff.

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*California Environmental Protection Agency*



If you have any questions regarding your new WDRs, please call Guy Childs at (916) 464-4648.

- Original Signed by -

MARK R. LIST, Chief  
Waste Discharge to Land Unit

Enclosures - Adopted Waste Discharge Requirements  
Standard Provisions and Reporting Requirements

cc w/o enc: Frances McChesney, Counsel, Water Resources Control Board, Sacramento  
Gordon Innes, Department of Water Quality, Water Resources Control Board,  
Sacramento  
Yolo County Environmental Health Department, Woodland  
Department of Water Resources, Sacramento  
Department of Health Services, Environmental Management Branch, Sacramento  
Department of Fish and Game, Rancho Cordova  
Ambrose McCready, SCS Engineers, Sacramento  
John Perry, Syar Industries, Napa

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2006-0069

WASTE DISCHARGE REQUIREMENTS  
FOR  
SYAR INDUSTRIES, INC.  
SYAR MADISON PLANT  
YOLO COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Regional Board), finds that:

1. Syar Industries, Inc. submitted a Report of Waste Discharge (RWD) dated 5 July 2005 (with supplemental information received on 17 August and 22 November 2005, and 20 March 2006) to update the existing Waste Discharge Requirements (WDRs) for the Syar Madison Plant aggregate mining and processing facility.
2. The Syar Madison Plant is located at 1650 County Road 89 near the town of Madison in Yolo County. The off-channel mining area is located south of Cache Creek and is bordered on the west by County Road 87 and on the east by County Road 89. The facility is in portions of Sections 16, 17, 22, and 23 of T10N, R1W, MDB&M as shown on Attachment A, which is attached hereto and made part of the Order by reference.
3. The facility comprises Assessor's Parcel Numbers 049-130-05, 049-130-27, 049-120-06, and 049-120-16. Mining and reclamation will occur on approximately 248 acres. Syar Industries, Inc. (Discharger) owns the land and operates the aggregate processing plant at the facility.
4. Order No. 85-185, which prescribed requirements for land discharge of aggregate processing wastewater, was adopted by the Regional Board on 28 June 1985. This Order is no longer adequate because the Discharger requests to designate new excavations as aggregate process wash water ponds. In addition, this Order is neither adequate nor consistent with current plans and policies of the Board, and is therefore being revised to reflect the current operations of the facility.

**Sand and Gravel Operations**

5. The Discharger operates an aggregate processing plant at which excavated materials are screened, washed, classified and sorted, and stockpiled. The stockpiled materials are subsequently used to produce concrete and asphaltic concrete aggregate, trench backfill, and roadbase material. These materials are loaded onto trucks for off-site delivery.
6. The Discharger mines sand and gravel from the terrace areas of Cache Creek, and removes silt and clay (approximately 10 percent by volume) during aggregate washing.
7. The facility includes former, current, and future gravel pits and extends along the southern bank of Cache Creek.
8. The mining and reclamation process (as described in the June 1999 Mining and Reclamation Plan) will consist of mining four areas on approximately 248 acres over a 30 year period. Up to 1.2

million tons of aggregate will be processed annually by the plant. A summary of the mining areas is as follows:

<u>Mining Area</u>	<u>Acres Mined</u>	<u>Years to Mine</u>	<u>Total Volume of Excavated Material Estimate (Tons)<sup>1</sup></u>	<u>Saleable Volume of Aggregate Estimate (Tons)<sup>2</sup></u>
A-1	16.56	0.9	1,534,716	880,792
A-2	29.27	2.4	4,049,394	2,370,669
B-1	80.01	8.7	15,761,311	8,726,678
B-2	122.03	18	28,794,958	18,019,189

<sup>1</sup> Includes volume of topsoil, overburden, gross aggregate, and clay waste.

<sup>2</sup> Approximately one million tons of aggregate is the average annual production level for the life of the quarry

9. The mining areas are located south and west of Cache Creek and west of the material processing areas. Sand and gravel are dredged below the water table from the alluvial deposits in pits using draglines and a yarder. Following removal, loaders deliver the mined material to a conveyor belt where it is transported to a location approximately two miles east of the pit and stockpiled. The stockpiled material is then delivered to the sand plant or the main plant for processing. These plants screen and wash the material to remove silt and clay, and segregate the sand from the gravel. Conveyors within the plants transport the material to various screens and crushers for further segregation and processing. Loaders then transfer the processed materials to stockpiles located throughout the facility where it is used for other processes or loaded onto transportation trucks for delivery off-site. A process schematic of the system is presented as Attachment B, which is attached hereto and made part of this Order by reference.
10. A pea gravel plant located southeast of the main plant is used to segregate pea-sized gravel into various sizes. Loaders are used to transport the material to the plant for processing, and conveyors are used to transfer the segregated material to stockpiles located throughout the facility.
11. A supply well located on the site supplies makeup water to replace water lost to evaporation or retained in the gravel. This well is not equipped with a flow meter and/or run time meters.
12. The RWD states that there are two permanent aggregate process wash water ponds (PWP-1 and PWP-2) located on site. The location of these ponds is shown on Attachment C, which is attached hereto and made part of this Order by reference. PWP-1 is a used to collect process water from the steam cleaner and the Pea Gravel Plant. PWP-2 is used to collect process water from the sand and main plants, and any storm water runoff in vicinity of the fuel containment area and the former redi-mix plant. The bottoms of the ponds are approximately 5 to 15 feet above the groundwater table. The physical characteristics of the process wash water ponds are as follows:

<u>Parameter</u>	<u>PWP-1</u>	<u>PWP-2</u>
Surface Area (square feet)	1,875	38,000
Approximate Depth (feet bgs)	15	15

<u>Parameter</u>	<u>PWP-1</u>	<u>PWP-2</u>
Volume with 2-feet of freeboard (cubic feet)	15,600	487,500
Volume with 2-feet of freeboard (gallons)	116,688	3,646,500

13. Two temporary ponds (PWP-3 [A1] and pond B1) have been created during mining. These ponds are located in mining areas A1 and B1. Locations of the ponds and mining areas are shown in Attachment C. The bottom of PWP-3 (A1) is currently at approximately 24 to 34 feet bgs but has been mined to approximately 50 feet bgs, which is below the groundwater table. PWP-3 (A1) is connected to PWP-2 via a pipeline. The B1 pond has been mined to the water table and process water has never been stored in the pond. In addition to these ponds, a fifth pond (A2) is in the process of being created in mining area A2 and a sixth pond will be created in area B2, a future area to be mined.
14. Wash water from the ponds is re-used for washing operations. The peak volume of wash water recirculated between the aggregate processing plant and the process wash water ponds is between 2,000 and 2,500 gallons per minute (gpm). Approximately 3,200 tons of aggregate is processed per eight hour shift. The Discharger typically operates two eight hour shifts per week day during the months of May through October, and one shift per week day the remainder of the year.
15. The Discharger has completed a water balance for the facility that demonstrates that there is adequate storage capacity available for a monthly average discharge to the process wash water ponds (PWP-1, 2, and 3) of up to 1.8 million gallons per day (mgpd) during the peak processing months (May through October) and 348 million gallons annually. The water balance was prepared using average daily inflows to the ponds, total pond capacities, pond percolation, local evaporation rates, and the local 100-year total annual precipitation rates, with the ponds maintaining at least two feet of freeboard at all times.
16. The RWD indicates that there are no chemical additives used in the mining or processing operations. No polymers or flocculants are used in the ponds.
17. Twice annually since the year 2000, the Discharger has sampled the wash water in PWP-2 and PWP-3 for several constituents. A summary of select results are as follows:

**Wastewater Pond Concentrations, Minimum-Maximum Range**

<u>Constituents</u>	<u>Units</u>	<u>PWP-2</u>	<u>PWP-3</u>	<u>Water Quality Limit<sup>1</sup></u>
pH	pH Units	8.2 – 8.67	8.4 – 8.6	6.5 – 8.4
TDS	mg/L	230 – 430	270 – 330	450
Specific Conductance	µmhos/cm	500 - 720	470 - 550	900
Sodium	mg/L	44 - 57	39 - 47	69
Magnesium	mg/L	27 - 40	25 - 32	NA
Chloride	mg/L	42 - 110	39 - 60	106
Sulfate as SO4	mg/L	27 - 39	26 – 36	250
Nitrate as Nitrate	mg/L	3.3 - 26	<2.0 – 9.6	45
Total Coliform	MPN/100 mL	13 - >1,600	2.0 - 900	<2.2

<u>Constituents</u>	<u>Units</u>	<u>PWP-2</u>	<u>PWP-3</u>	<u>Water Quality Limit<sup>1</sup></u>
Fecal Coliform	MPN/100 mL	<2.0 - 500	<2.0 - 900	<2.2
Aluminum	mg/L	<0.050 – 0.620	<0.050 – 0.360	0.2
Arsenic	mg/L	<0.005	<0.0050	0.000004
Barium	mg/L	0.078 – 0.170	0.080 – 0.120	0.001
Cadmium	mg/L	<0.010	<0.010	0.00007
Chromium	mg/L	<0.010	<0.010	0.05
Copper	mg/L	<0.010	<0.010	0.17
Iron	mg/L	<0.010 – 0.73	<0.10 – 0.49	0.3
Mercury	mg/L	<0.00020	<0.00020	0.0012
Manganese	mg/L	<0.020 – 0.170	<0.020 – 0.048	0.05
Lead	mg/L	<0.0050	<0.0050	0.002
Selenium	mg/L	<0.0050	<0.0050	0.02
Zinc	mg/L	<0.020	<0.020	2
<u>Turbidity</u>	NTU	<0.50 – 9.3	3.6 - 24	NA

NA Not applicable

< Detected below the reporting limit

<sup>1</sup> Or the natural background concentration in groundwater, whichever is higher

Note: Total petroleum hydrocarbons, benzene, toluene, ethylbenzene, and xylenes are reported below their respective detection limits. Pesticides and herbicides were also reported below their detection limits.

18. These constituents are generally below their respective water quality limits for the protection of beneficial uses with notable exceptions of total and fecal coliform. As human waste is completely isolated from process wash water, the coliform present in the aggregate wash water ponds is most likely due to the presence of the wildlife (ducks, etc.) that have open access to the ponds.
19. The RWD states that once the temporary ponds have been reclaimed, they will be returned to agricultural use. Prior to reclamation, water from these ponds may be used to irrigate nearby crops during the summer months.
20. Silts and other fines are removed from PWP-1 and PWP-2 on a periodic basis via dredging and are dewatered before use as reclaimed sediments in the mined areas.

### **Groundwater Conditions**

21. The previous WDRs did not require groundwater monitoring, but the Discharger has been monitoring groundwater quality at the site since 1996. The groundwater monitoring program was established as a California Environmental Quality Act (CEQA) mitigation measure by Yolo County as part of the mining permit requirements to detect any groundwater quality degradation associated with mining activities.
22. The RWD states that there are 22 wells on the property. Of these, 14 are used for irrigation, four are industrial, three are abandoned, and one is used for domestic purposes. In addition, 11 groundwater monitoring wells are located south of Cache Creek. The irrigation and industrial water supply wells are completed between 65 and 210 feet bgs and the monitoring wells are completed to depths between 55 and 70 feet bgs, in the first hydrostratigraphic zone. The monitoring wells are typically completed with 30 to 40 feet of screen. Locations of the groundwater monitoring wells are shown on Attachment C.

23. Several groundwater monitoring wells (MW-3, MW-9, MW-10, MW-11) have been sampled annually since 1996 by Yolo County. The RWD states that MW-2, MW-4, and MW-6 will be added to the annual sampling program. Water levels during the summer months range from approximately 30 to 40 feet bgs and from approximately 23 to 25 feet bgs during the winter months. Groundwater gradient is generally to the east-southeast with MW-3 being the well most upgradient of the mining areas.

24. A summary of select groundwater monitoring results are as follows:

**Groundwater Concentrations, Minimum-Maximum Range**

Constituents	Units	Upgradient	Downgradient	Downgradient	Downgradient	Water Quality Limit <sup>1</sup>
		MW-3	MW-9	MW-10	MW-11	
pH	pH Units	7.6 – 7.9	7.5 – 8.1	7.3 – 7.6	7.5 – 8.2	6.5 – 8.4
TDS	mg/L	250 – 350	300 - 440	310 – 500	380 – 470	450
Specific Conductance	μmhos/cm	470 – 580	540 - 750	510 – 780	610 – 880	900
Sodium	mg/L	36 – 43	45 - 89	46 – 58	51 - 56	69
Chloride	mg/L	29 – 100	40 - 140	44 – 95	41 - 70	106
Sulfate as SO4	mg/L	21 - 30	24 - 89	27 – 66	29 - 41	250
Nitrate as Nitrate	mg/L	<2.0 – 4.1	4.6 - 70	8.1 – 46	23 - 59	45
Total Coliform	MPN/100 mL	<2.0 - 8	<2.0 – 2.0	<2.0	<2.0 – 4.0	<2.2
Fecal Coliform	MPN/100 mL	<2.0 – 4.0	<2.0	<2.0	<2.0	<2.2
Aluminum	mg/L	<0.050 – 1.8	<0.050 -0.19	<0.050 – 0.44	<0.050 – 1.3	0.2
Arsenic	mg/L	<0.005	<0.005	<0.050	<0.005	0.000004
Barium	mg/L	0.1 – 0.15	0.094 – 0.170	0.12 – 0.19	0.170 – 0.24	0.001
Cadmium	mg/L	<0.010	<0.010	<0.010	<0.010	0.000007
Chromium	mg/L	<0.010	<0.010 - 0.011	<0.010 –0.012	<0.010 – 0.014	0.05
Copper	mg/L	<0.010	<0.010	<0.010	<0.010	0.17
Iron	mg/L	<0.10 – 2.3	<0.10 – 0.24	<0.1 – 0.54	<0.10 – 1.6	0.3
Mercury	mg/L	<0.0002	<0.00020	<0.00020	<0.0002	0.0012
Manganese	mg/L	<0.020 – 0.046	<0.020	<0.02	<0.020	0.05
Lead	mg/L	<0.0050	<0.005	<0.0050	<0.0050	0.002
Selenium	mg/L	<0.0050 – 0.0078	<0.005 – 0.0064	<0.0050 – 0.0072	<0.0050	0.02
Zinc	mg/L	<0.020 – .031	<0.020 –0.067	<0.020 – 0.032	<0.020 – 0.027	2

NA Not applicable

< Detected below the reporting limit

<sup>1</sup> Or the natural background concentration in groundwater, whichever is higher

Note: Total petroleum hydrocarbons, benzene, toluene, ethylbenzene, and xylenes are reported below their respective detection limits. Pesticides and herbicides were also reported below their detection limits.

25. Based on these data, groundwater concentrations of TDS and nitrate in downgradient monitoring wells are greater than those in the upgradient well and sometimes exceed the applicable water quality limit for the protection of beneficial uses. However, the nitrate concentrations may be due to neighboring agricultural land uses. The increase in TDS may reflect natural variation in constituent concentrations and/or contribution of soluble salts from adjacent agricultural land. Additionally, the site is adjacent to Cache Creek, which contributes high quality recharge to the aquifer. Further study is required to determine background groundwater quality. The elevated

coliform organisms reported in the aggregate wash water appears to be adequately filtered by the aquifer materials surrounding the wash water settling ponds.

### **Site-Specific Conditions**

26. Soils beneath the facility consist of unconsolidated alluvium and the Tehama Formation. The alluvium is estimated at approximately 100 to 150 feet thick beneath the site. The alluvium consists primarily of Cache Creek stream channel deposits and is underlain by the Tehama Formation at depths to approximately 400 feet below ground surface.
27. The average annual precipitation in the vicinity of the facility is approximately 20 inches with most occurring between November and March. Storm water runoff at the Syar Madison Plant drains towards both Cache Creek and the mined areas, including the processing plant areas. The storm water that is retained on-site percolates or evaporates.
28. The Discharger operates an asphalt plant, which produces asphaltic concrete by combining proportions of aggregate mixture and imported hot oil in a high temperature process. Asphalt oil used in the manufacturing process is delivered onsite in tanker trucks and is stored in heated storage tanks. The asphalt hot mix is then discharged into trucks or stored in heated tanks. No process water is generated from the plant. The plant includes a dryer, two 30,000 gallon asphalt tanks, and a 250 gallon heat transfer oil tank.
29. The RWD states that a redi-mix concrete plant south of the main plant has not been in operation since 1989, and that there are no plans to operate this plant in the near future.
30. The facility includes a fueling area located east of the asphalt plant. This area is used for fueling vehicles and mobile equipment, as well as storage for hazardous materials. In addition, this fueling area contains two containment areas. One containment area includes a 15,000 gallon offroad diesel tank, a 1,500 gallon gasoline tank and a waste material storage area. The other containment area includes two 8,000 gallon offroad diesel tanks, a 500 gallon on road diesel tank and a 1,000 gallon waste oil tank. All of the tanks are aboveground in concrete secondary containment structures used to contain 110 percent of the largest tank rating. Petroleum and waste products are stored in steel drums within each of the containment areas.
31. The RWD does not provide information showing that the process wash water ponds, including the reclamation areas, are outside the 100 year flood plain. This Order requires the Discharger to provide a technical report, which demonstrates that the ponds are outside the 100-year flood plain. If the facility is within the 100-year flood plain, the Discharger shall submit a workplan describing measures that will be taken to protect the ponds from inundation from floods within a 100-year return frequency.
32. Domestic wastewater disposal at the facility consists of a septic tank/leachfield system, which is regulated by Yolo County Environmental Health Department.



### **Basin Plan, Beneficial Uses, and Regulatory Considerations**

33. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board (State Board). Pursuant to Section 13263(a) of the California Water Code, waste discharge requirements must implement the Basin Plan.
34. Surface water drainage in the vicinity of the facility is to Cache Creek and Willow Slough. The Basin Plan designates the beneficial uses of Cache Creek as municipal and domestic supply; agricultural supply; industrial supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; spawning, reproduction, and/or early development; and wildlife habitat. Willow Slough is a tributary to the Willow Slough Bypass and the Yolo Bypass. The Basin Plan designates the beneficial uses of Yolo Bypass as agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.
35. The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic, industrial, and agricultural supply.
36. State Board Resolution No. 68-16 does not allow degradation of groundwater quality unless it has been shown that:
  - a. The degradation is consistent with the maximum benefit to the people of the State;
  - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
  - c. The degradation does not cause exceedance of one or more water quality objectives; and
  - d. The discharger employs best practicable treatment and control of the discharge to minimize degradation.
37. The Regional Board has considered anti-degradation pursuant to State Board Resolution No. 68-16, and finds that the Discharger has not provided the required demonstration to be allowed to cause groundwater degradation. Therefore, none is authorized.
38. The Discharger's waste characterization and groundwater monitoring data indicate that the discharge has little potential to degrade groundwater with various inorganic constituents, depending upon the effectiveness of attenuation. However, the existing groundwater monitoring data are not sufficient to allow determination of background groundwater quality or detect potential groundwater degradation. Based on the available data, it is possible that degradation of groundwater will occur from evapoconcentration and natural geochemical processes associated with exposure of groundwater to the atmosphere. It is therefore appropriate to require that the Discharger formally determine background groundwater quality and evaluate whether any of the waste constituents discharged have degraded, or have the potential to degrade, groundwater quality.

39. Section 13267(b) of California Water Code states that: “In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”
40. The monitoring and reporting program required by this Order and the attached Monitoring and Reporting Program No. R5-2006-0069, are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.
41. The action to update WDRs for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), in accordance Title 14, California Code of Regulations (CCR), Section 15301.
42. The Discharger has obtained coverage under the State Board’s Water Quality Order No. 97-03-DWQ National Pollutant Discharge Elimination System (NPDES), General Permit No. CAS000001, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Associated with Industrial Activities.
44. The Discharger will continue to implement the 16 February 1999 Madison Plant Off-Channel Mining and Reclamation Plan to comply with Section 272 of the Surface Mining and Reclamation Act.
45. This discharge is exempt from the requirements of *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq., (hereafter Title 27). The exemption pursuant to Section 20090(b), is based on the following:
  - a. The Regional Board is issuing these waste discharge requirements, which implement the Basin Plan;
  - b. The Discharger will comply with these waste discharge requirements; and
  - c. The wastewater does not need to be managed according to Title 22 CCR, Division 4.5, and Chapter 11, as a hazardous waste.
46. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

### Public Notice

47. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
48. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
49. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that Order No. 85-185 is rescinded and that, pursuant to Sections 13263 and 13267 of the California Water Code, Syar Industries, Inc. and its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

*[Note: Other prohibitions, conditions, definitions, and methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]*

#### **A. Discharge Prohibitions:**

1. The discharge of wastes or pollutants to surface waters or surface water drainage courses is prohibited.
2. The discharge of domestic waste, asphaltic concrete waste, concrete waste, or concrete wash water to any process wastewater settling pond is prohibited.
3. Discharge of waste classified as hazardous, as defined in Sections 2521(a) of Title 23, CCR, Division 3, Chapter 15, Section 2510, et seq., (hereafter Chapter 15), or 'designated', as defined in Section 13173 of the California Water Code, is prohibited.
4. Use of chemical gold recovery techniques (including amalgamation, cyanide leaching, or any other chemical method) is prohibited.
5. The discharge of industrial waste to septic systems is prohibited.
6. The operation of a concrete batch plant is prohibited until the Discharger has obtained coverage for such discharge under a separate Regional Board adopted Order.
7. The generation of any process wastewater at the asphalt plant is prohibited.

#### **B. Discharge Specifications:**

1. The monthly average flow of aggregate wash water to the process wash water ponds shall not exceed 1.8 million gallons per day during the months of May through October. Total

annual flows shall not exceed 348 million gallons. If the Discharger wishes to increase the monthly average flow then the Discharger shall submit the technical report required by Provision E.2.1 of this Order. Upon approval by the Executive Officer, flow to the process wash water ponds may be increased.

2. Water or process wastewater, if used for dust control or onsite irrigation, shall be used in a manner that will not cause eroded soil or sedimentation in runoff to be discharged to areas not controlled by the Discharger.
3. The storage and discharge of process wastewater shall remain within the property boundaries at all times as shown on Attachment C. Additional process water ponds may be constructed within the property boundaries.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. Neither the treatment nor the discharge shall cause a condition of pollution or nuisance as defined by the California Water Code, Section 13050.
6. The ponds shall be managed to prevent breeding of mosquitoes. In particular:
  - a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
  - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
7. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
8. The wastewater system shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
9. All stockpiled sediments, wastes and products shall be managed to prevent erosion of sediment to surface water drainage courses.
10. Newly constructed or rehabilitated levees or berms that hold back water shall be designed and constructed under the direct supervision of a California Registered Civil Engineer or Certified Engineering Geologist.
11. The freeboard in each wastewater pond shall never be less than two feet as measured vertically from the water surface to the lowest point of overflow along the pond berm.
12. The wastewater ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the wet season. Design seasonal precipitation shall be based on total annual precipitation using a

return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

13. Before **1 October** of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specification Nos. 11 and 12.
14. Storm water discharges at the site shall comply with the regulations contained in the State Water Board's Water Quality Order No. 97-03-DWQ National Pollutant Discharge Elimination System (NPDES), General Permit No. CAS000001, Waste Discharge Requirements for Discharges to Storm Water Associated with Industrial Activities (excluding construction activities).
15. Before **15 October** of each year, all necessary runoff diversion channels and culverts shall be in a condition to transport waters originating outside the facility.
16. The Discharger shall comply with all applicable sections of the Aboveground Petroleum Storage Tank Regulations (Section 25270, Health and Safety Code).

**C. Effluent Limitations:**

Discharge of wash water or any process wastewater to the aggregate wash water pond in excess of the following limits is prohibited:

<u>Constituent or Parameter</u>	<u>Limit</u>
pH	6.5-8.4 Standard Units

**D. Groundwater Limitations:**

The discharge shall not cause underlying groundwater to contain waste constituents in concentrations statistically greater than natural background water quality.

**E. Provisions:**

1. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
2. The following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described in Provision E.1:

- a. By **1 September 2006**, the Discharger shall submit a report and map defining all sampling locations and freeboard measuring points required by Monitoring and Reporting Program No. R5-2006-0069.
- b. By **1 September 2006**, the Discharger shall submit a technical report which demonstrates that the existing process wash water ponds (PWP 1, 2, and 3) are outside the 100-year flood plain. If the ponds are within the 100-year flood plain, the Discharger shall submit a workplan describing measures that will be taken to protect the ponds from inundation from floods within a 100-year return frequency.
- c. By **1 September 2006**, the Discharger shall submit a *Groundwater Sampling and Analysis Plan* (SAP) that describes detailed instructions and procedures for proper purging and sampling of monitoring wells; equipment decontamination; sample handling, storage and shipment; and completing the chain of custody. The SAP shall include items in the first section of Attachment D, which is attached hereto and made part of this Order by reference.
- d. By **1 September 2006**, the Discharger shall submit a Flow Measurement Verification Report. If the Discharger elects to report flows based on pump run times, then the report shall completely document the calibration of effluent and recycling system pumps, correlate actual flows to pump run time estimates generated from the manufacturer's pump curves, and provide a calculation correction (as appropriate) to be applied to convert from pump run time to gallons for each system. Calibration test data, manufacturer's pump curves, and calculations shall be included in the report. Alternatively, the report may document the installation of flow meter(s).
- e. By **1 November 2006**, the Discharger shall submit an Operations and Maintenance Plan, including (a) notification procedures and actions to be taken when the wastewater in the ponds fail to meet specified requirements for freeboard or pH, or create a condition of pollution or nuisance, (b) weed abatement measures and vector control practices, and (c) a berm inspection and maintenance program. This plan shall also describe the procedures that will be implemented during the event of an unauthorized discharge to surface water or surface water drainage courses.
- f. By **1 August 2007**, the Discharger shall submit a report evaluating the existing monitoring wells (MWs) 3, 9, 10, and 11 and whether they are located such that they adequately monitor the groundwater conditions upgradient and downgradient of the process wash water ponds. This evaluation shall be made following four quarterly groundwater monitoring events (third quarter 2006 through second quarter 2007). Additional water level measurements may be collected as desired to verify the flow direction. If the existing wells are not placed such that they are upgradient and downgradient of the process wash water ponds, then by this date the Discharger shall also submit a *Monitoring Well Installation Workplan*. The workplan shall propose sufficient additional wells (existing or new) to meet the above requirement, and shall contain the information listed in the first section of Attachment D.

- g. By **1 September 2007**, the Discharger shall submit a report documenting that flood protection measures have been completed according to the approved workplan.
- h. If the report required by Provision E.1.f found that additional monitoring well(s) were necessary, then by **1 December 2007**, the Discharger shall submit a *Monitoring Well Installation Report* containing the information listed in the second section of Attachment D.
- i. By **1 December 2009**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least eight consecutive quarterly groundwater monitoring events.
- j. If, as a result of the monitoring conducted by MRP No. R5-2006-0069, mercury is detected at concentrations equal to or greater than 50 nanograms per liter (ng/L) in any process wash water pond, then within **90 days** the Discharger shall submit a workplan to characterize mercury in the water and sediment within the designated areas. Within **120 days** of approval by the Executive Officer of the workplan the Discharger shall submit a report describing the results. If such report demonstrates the presence of mercury at concentrations that may cause bioaccumulation as a result of the final reclamation of the site, then within 120 days, the Discharger shall submit a report evaluating alternatives to reduce mercury to acceptable levels.

If a water quality objective different than 50 ng/L is promulgated, then this permit may be reopened and staff may reevaluate the need for characterization of mercury concentrations in the water and sediment within the designated disposal areas.

- k. At least **180 days** prior to operation of a concrete batch plant, the Discharger shall submit a RWD for coverage under a Site Specific Order.
  - l. At least **90 days prior** to the Discharger's proposal to increase the monthly average flow to the process wash water ponds, the Discharger shall submit a technical report, including a water balance that demonstrates adequate containment and pumping capacity for proposed flows, design seasonal precipitation, and inflow and infiltration using the 100-year return period total annual precipitation. The technical report must be approved by the Executive Officer prior to increasing the flows.
3. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2006-0069, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.
  4. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and

by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s).

5. The Discharger shall submit to the Regional Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.
6. The Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge.
7. In the event of any change in control or ownership of the facility or land application areas, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements a violation of the California Water Code. Transfer shall be approved or disapproved by the Executive Officer.
8. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
9. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
10. The Regional Board will review this Order periodically and may revise requirements when necessary.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 23 June 2006.

Original Signed by  
PAMELA C. CREEDON, Executive Officer

GJC/MRL: 23-Jun-06

AMENDED



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2006-0069

FOR  
SYAR INDUSTRIES, INC.  
SYAR MADISON PLANT  
YOLO COUNTY

This monitoring and reporting program (MRP) incorporates requirements for monitoring the aggregate wash water settling ponds and groundwater. This MRP is issued pursuant to Water Code 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Field test instruments (such as those used to measure pH and dissolved oxygen) may be used provided that:

1. The operator is trained in the proper use and maintenance of the instruments;
2. The instruments are field calibrated prior to each monitoring event;
3. The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

**POND MONITORING**

Each pond that receives wastewater shall be inspected weekly and monitored as follows:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Freeboard <sup>1</sup>	0.1 Feet	Measurement	Weekly	Monthly
Berm Condition <sup>2</sup>	N/A	Observation	Weekly	Monthly

<sup>1</sup>Freeboard shall be measured from the lowest point of overflow.

<sup>2</sup>Evidence of leakage or overflow shall be noted.

**WASTEWATER MONITORING**

A composite sample shall be obtained from process wash water pond PWP-3. The composite sample shall be comprised of at least four equal aliquots obtained from different sampling locations on the same day, and shall be thoroughly mixed in a clean plastic or glass container. At a minimum, the Discharger shall monitor the wastewater in the pond as follows:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Influent flow	gpd	Flow Meter or Pump Run Times	Daily	Monthly
Nitrate (as NO <sub>3</sub> )	mg/L	Composite	Monthly	Monthly
pH	PH units	Composite	Monthly	Monthly
Total dissolved solids	mg/L	Composite	Monthly	Monthly
Total coliform organisms <sup>1</sup>	MPN/100 ml	Composite	Monthly	Monthly
Dissolved Metals <sup>2,3</sup>	µg/L	Grab	Annual	Annual <sup>5</sup>
Total Recoverable Mercury (non-filtered) <sup>4</sup>	ng/L	Grab	Semi Annual	Semi Annual <sup>6</sup>

<sup>1</sup>Using a minimum of 15 tubes or three dilutions.

<sup>2</sup>At a minimum, the following metals shall be included: aluminum, antimony, arsenic, total chromium, hexavalent chromium, copper, iron, lead, manganese, magnesium, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. Analytical methods shall be selected to provide detection limits below the limiting Water Quality Goal for each constituent.

<sup>3</sup>Samples shall be filtered through a 0.45 micron filter prior to preservation.

<sup>4</sup>The total recoverable mercury detection limit shall be no more than 5 ng/L.

<sup>5</sup>Included in the Annual Monitoring Report.

<sup>6</sup>Included in the January and July monthly reports.

### GROUNDWATER MONITORING

The Discharger shall monitor groundwater quality using existing groundwater monitoring wells (MWs) 3, 9, 10, and 11 beginning with the third quarter 2006 sampling event.

Prior to construction of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the MRP, and shall be sampled and analyzed according to the schedule below.

Groundwater elevations shall be measured prior to purging. Each well shall be purged of at least three well volumes until temperature, pH and electrical conductivity have stabilized prior to sampling. Depth to groundwater shall be measured to the nearest 0.01 feet. Water table elevations shall be calculated based on surveyed wellhead elevations and used to determine groundwater gradient and direction of flow. Groundwater samples shall be collected using approved EPA methods. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Depth to groundwater	0.01 Feet	Measurement	Quarterly	Quarterly
Groundwater elevation	Feet	Calculated	Quarterly	Quarterly
Gradient	Feet	Calculated	Quarterly	Quarterly
Flow direction	Degrees	Calculated	Quarterly	Quarterly

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Mercury, total	mg/L	Grab	Quarterly	Quarterly
Nitrate (as NO <sub>3</sub> )	mg/L	Grab	Quarterly	Quarterly
pH	pH Units	Grab	Quarterly	Quarterly
Total dissolved solids	mg/L	Grab	Quarterly	Quarterly
Total Coliform Organisms <sup>1</sup>	MPN/100 mL	Grab	Quarterly	Quarterly
Dissolved Metals <sup>2,3</sup>	µg/L	Grab	Annual	Annual <sup>5</sup>
Total Recoverable Mercury (non-filtered) <sup>4</sup>	ng/L	Grab	Annual	Annual <sup>5</sup>

<sup>1</sup>Using a minimum of 15 tubes or three dilutions.

<sup>2</sup>At a minimum, the following metals shall be included: aluminum, antimony, arsenic, total chromium, hexavalent chromium, copper, iron, lead, manganese, magnesium, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. Analytical methods shall be selected to provide detection limits below the limiting Water Quality Goal for each constituent.

<sup>3</sup>Samples shall be filtered through a 0.45 micron filter prior to preservation.

<sup>4</sup>The total recoverable mercury detection limit shall be no more than 5 ng/L.

<sup>5</sup>Included in the Annual Monitoring Report.

## REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Engineer or a Professional Geologist and signed/stamped by the registered professional.

### A. Monthly Monitoring Reports

Monthly Monitoring Reports shall be submitted to the Regional Board on the **1<sup>st</sup> day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the Monthly Monitoring Report shall include:

1. Results of pond and wastewater monitoring.
2. A map depicting the locations of all active wastewater ponds, storm water ponds, and the locations where freeboard is measured.
3. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format.

4. If requested by staff, copies of laboratory analytical report(s).
5. A calibration log verifying calibration of all monitoring instruments and devices used to comply with the prescribed monitoring program.

## **B. Quarterly Monitoring Reports**

The Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. Beginning with the third quarter 2006 sampling event, Quarterly Monitoring Reports shall be submitted to the Board by the **1<sup>st</sup> day of the second month after the quarter** (i.e. the January-March quarter is due by May 1<sup>st</sup>) each year. The Quarterly Monitoring Report shall include the following:

1. Results of groundwater monitoring, including any groundwater elevation and water quality data obtained in accordance with the mining permit issued by Yolo County.
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDRs, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
5. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
6. Summary data tables of historical and current water table elevations and analytical results;
7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum;
8. Copies of laboratory analytical report(s) for groundwater monitoring.

## **C. Annual Monitoring Report**

An Annual Monitoring Report shall be prepared as the fourth quarter monitoring report. The Annual Monitoring Report shall include all monitoring data required in the monthly/quarterly schedule and shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented in the Quarterly Monitoring Reports, the Annual Monitoring Report shall include the following:

1. The contents of the regular groundwater monitoring report for the last sampling event of the year;
2. If requested by staff, tabular and graphical summaries of all data collected during the year;
3. The total wastewater flow for the year;
4. An evaluation of the groundwater quality beneath the wastewater ponds;
5. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements;
6. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;
7. The results for analyses that are performed annually (as set forth above);
8. If pump run times are used to measure wastewater flows, then the pump(s) shall be recalibrated on an annual basis, and the Annual Report shall include a Flow Measurement Verification Report containing the information listed in Provision No. E.2.d.
9. A summary of information on the management and disposal of sediments;
10. A forecast of influent flows for the coming year, as described in Standard Provision No. E.4.

A transmittal letter shall accompany each self-monitoring report. The letter shall discuss any violations during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the Discharger or the Discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

The Discharger shall implement the above monitoring program as of the date of this Order.

Original Signed by  
PAMELA C. CREEDON, Executive Officer

GJC/MRL: 23-Jun-06

AMENDED

## INFORMATION SHEET

ORDER NO. R5-2006-0069  
SYAR INDUSTRIES, INC.  
SYAR MADISON PLANT  
YOLO COUNTY

Syar Industries, Inc. owns and operates an aggregate mine and processing facility near Madison in Yolo County. The facility includes former, current, and future gravel pits and extends along the southern bank of Cache Creek. The Discharger mines up to 1.2 million tons of sand and gravel from the terrace areas of Cache Creek each year. The aggregate is transported from the mining areas to the processing plant where it is screened, washed, classified and sorted, and stockpiled according to product type. The stockpiled materials are subsequently used to produce concrete and asphaltic concrete aggregate, trench backfill and roadbase material.

Source water for the aggregate processing plant is obtained from an on-site well. Between 2,000 and 2,500 gallons per minute (gpm) of wash water is recirculated between the aggregate processing plant and three process wash water ponds (PWP-1, 2 and 3). This volume of water is necessary to process approximately 3,200 tons of aggregate per eight hour shift. During the months of May through October, the Discharger typically operates two eight hour shifts, and one shift per day during the remainder of the year.

Because the Discharger has not demonstrated that these process wash water ponds are located outside the 100-year flood plain, this Order requires the Discharger to provide a technical report, which demonstrates that the existing process wash water ponds are outside the 100-year flood plain. If the ponds are within the 100-year flood plain, the Discharger shall submit workplan describing measures that will be taken to protect the ponds from washout from floods within a 100 year return frequency and a report documenting that flood protection measures have been completed according to the approved workplan.

The Discharger also operates an asphalt plant, which produces asphaltic concrete by combining proportions of aggregate mixture and imported hot oil in a high temperature process. Asphalt oil used in the manufacturing process is delivered onsite in tanker trucks and stored in heated storage tanks. The asphalt hot mix is then discharged into trucks or stored in heated tanks. No process water is generated from the plant; and the Order prohibits such a discharge.

Historical gold mining has not occurred in the area. However because naturally occurring mercury is known to the area, this Order requires the Discharger to monitor mercury concentrations in its discharge. If mercury is detected at concentrations equal to or greater than 50 nanograms per liter (ng/l) in any process wash water pond, then the Discharger shall submit a workplan to further characterize mercury in the water and sediment within the designated disposal areas.

This Order also requires the Discharger to submit a Groundwater Sampling and Analysis Plan, a Flow Measurement Verification Report, an Operations and Maintenance Plan, and a Background Groundwater Quality Study Report. In addition, the Order requires the Discharger to submit a Groundwater Monitoring Well Installation Workplan and Report if the existing wells do not adequately monitor the groundwater quality upgradient and downgradient of the process wash water ponds. Pond and effluent monitoring and reporting is required monthly, and groundwater monitoring and reporting is required on a quarterly basis.

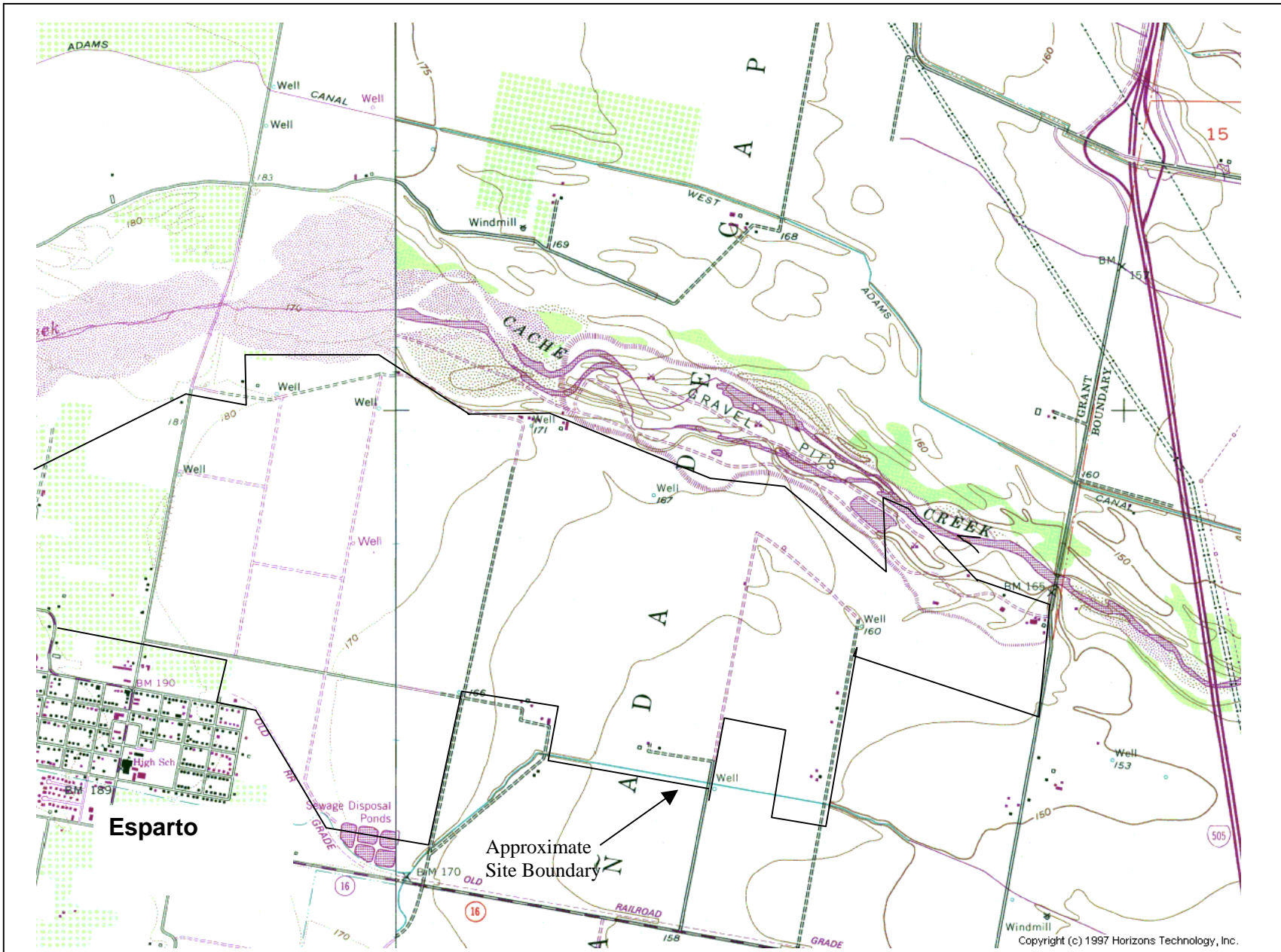
INFORMATION SHEET  
ORDER NO. R5-2006-0069  
SYAR INDUSTRIES, INC.  
SYAR MADISON PLANT  
YOLO COUNTY

-2-

Groundwater beneath the site has been monitored from onsite wells with water levels during the summer months ranging from approximately 30 to 40 feet below ground surface (bgs) and from approximately 23 to 25 feet bgs during the winter months. Groundwater gradient is generally to the east-southeast of Cache Creek. Surface water drainage is to Cache Creek and Willow Slough.

GJC/MRL: 23-Jun-06

AMENDED



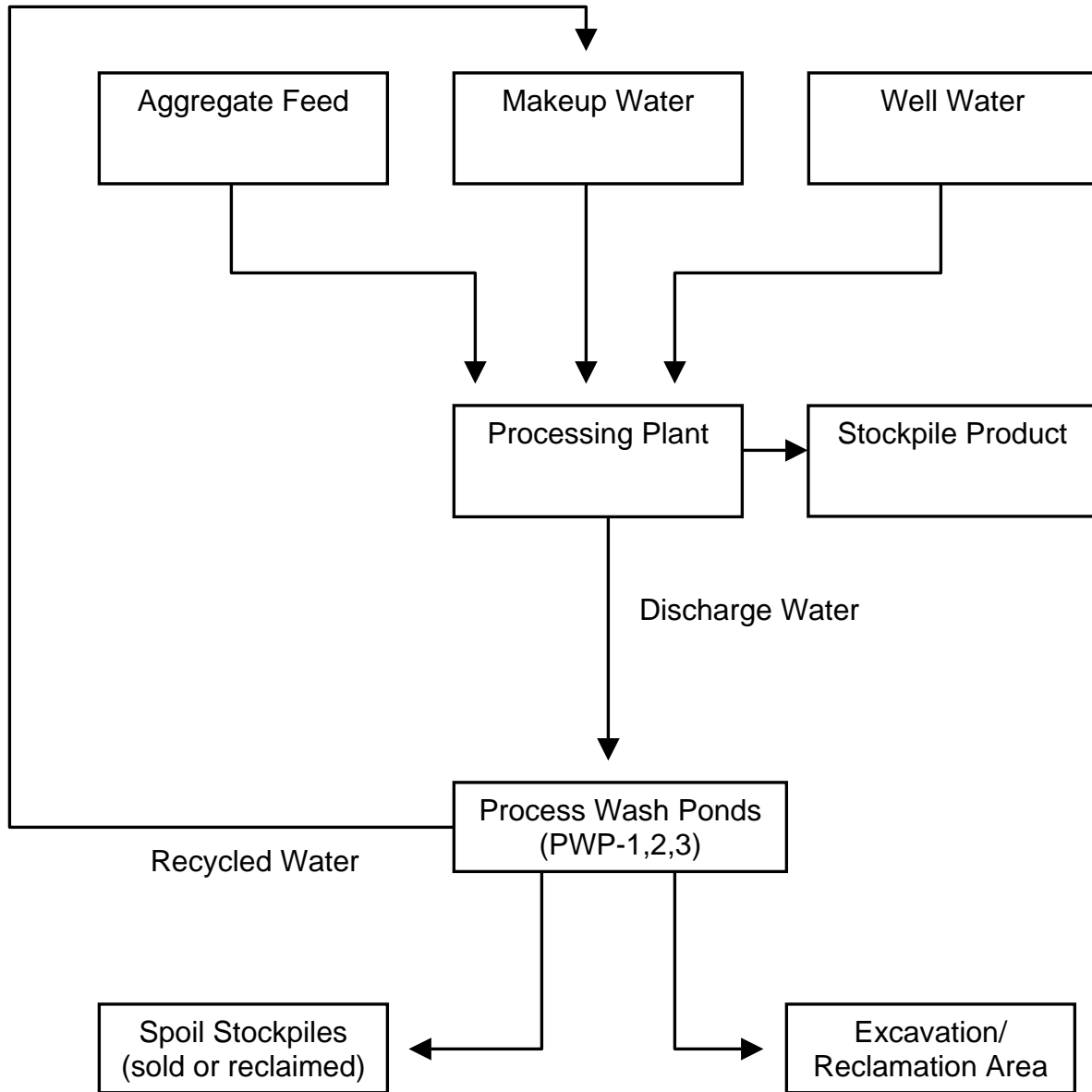
Drawing Reference:  
USGS Topographic Map  
7.5-Minute Quadrangle  
Esparto

**VICINITY MAP**  
**SYAR INDUSTRIES, INC.**  
**SYAR MADISON PLANT**  
**YOLO COUNTY**



Approx. Scale: 1" = 2,800'



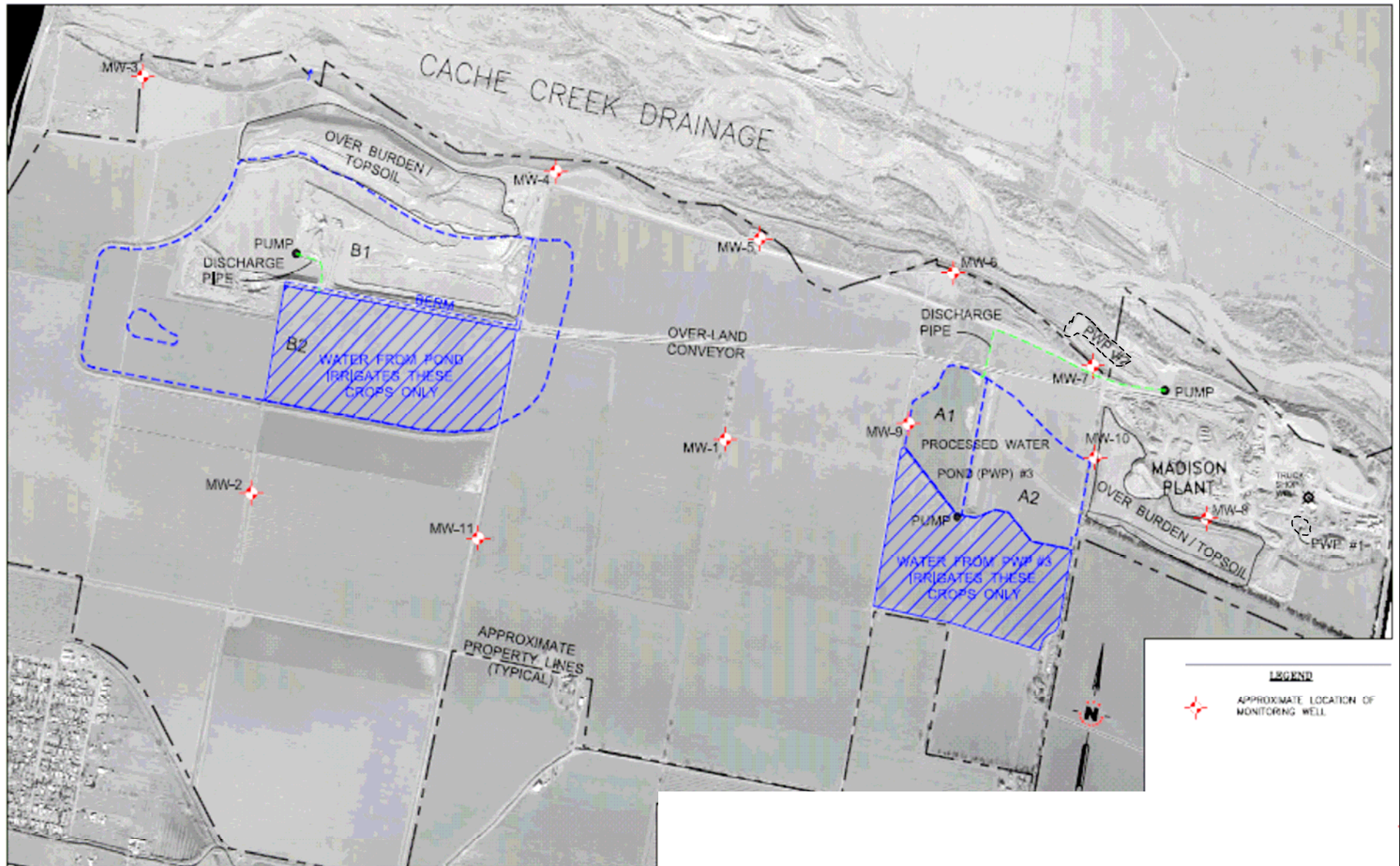


**PROCESS FLOW DIAGRAM**

SYAR INDUSTRIES, INC.  
SYAR MADISON PLANT  
YOLO COUNTY

**LEGEND**

→ Flow



Approximate Scale: 1 inch = 1,200 feet

**SITE PLAN**  
 SYAR INDUSTRIES, INC.  
 SYAR MADISON PLANT  
 YOLO COUNTY

Drawing Reference: SCS Engineers



**Linda S. Adams**  
Secretary for  
Environmental Protection

# California Regional Water Quality Control Board Central Valley Region

**Robert Schneider, Chair**



**Arnold  
Schwarzenegger**  
Governor

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## Sacramento Main Office

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## **ORDER NO. R5-2006-0069 ATTACHMENT D REQUIREMENTS FOR MONITORING WELL INSTALLATION WORKPLANS AND MONITORING WELL INSTALLATION REPORTS**

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approve the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in Section 2, below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

### **SECTION 1 - Monitoring Well Installation Workplan and Groundwater Sampling and Analysis Plan**

The monitoring well installation workplan shall contain the following minimum information:

**A. General Information:**

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions
- Proposed monitoring well locations and rationale for well locations
- Topographic map showing facility location, roads, and surface water bodies
- Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features

**B. Drilling Details:**

- On-site supervision of drilling and well installation activities
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Soil sampling intervals (if appropriate) and logging methods

**C. Monitoring Well Design (in narrative and/or graphic form):**

- Diagram of proposed well construction details
  - Borehole diameter
  - Casing and screen material, diameter, and centralizer spacing (if needed)
  - Type of well caps (bottom cap either screw on or secured with stainless steel screws)
  - Anticipated depth of well, length of well casing, and length and position of perforated interval

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**California Environmental Protection Agency**

- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Anticipated screen slot size and filter pack

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):

Method of development to be used (i.e., surge, bail, pump, etc.)

Parameters to be monitored during development and record keeping technique

Method of determining when development is complete

Disposal of development water

E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):

Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey

Datum for survey measurements

List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. **Appendix: Groundwater Sampling and Analysis Plan (SAP)**

The Groundwater SAP shall be included as an appendix to the workplan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
  - General sampling techniques
  - Record keeping during sampling (include copies of record keeping logs to be used)
  - QA/QC samples
- Chain of Custody
- Sample handling and transport

## **SECTION 2 - Monitoring Well Installation Report**

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved workplan.

A. General Information:

Purpose of the well installation project

Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells

Number of monitoring wells installed and copies of County Well Construction Permits

Topographic map showing facility location, roads, surface water bodies

Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):

On-site supervision of drilling and well installation activities

Drilling contractor and driller's name

Description of drilling equipment and techniques

Equipment decontamination procedures

Soil sampling intervals and logging methods

Well boring log

- Well boring number and date drilled
- Borehole diameter and total depth
- Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
- Depth to first encountered groundwater and stabilized groundwater depth
- Detailed description of soils encountered, using the Unified Soil Classification System

C. Well Construction Details (in narrative and/or graphic form):

Well construction diagram, including:

- Monitoring well number and date constructed
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)

E. Well Development:

Date(s) and method of development

How well development completion was determined

Volume of water purged from well and method of development water disposal

Field notes from well development should be included in report

F. Well Survey (survey the top rim of the well casing with the cap removed):

Identify the coordinate system and datum for survey measurements

Describe the measuring points (i.e. ground surface, top of casing, etc.)

Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix