

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ATTACHMENT B

INFORMATION NEEDS SHEET
FOR
ORDER R5-2017-00XX

WASTE DISCHARGE REQUIREMENTS GENERAL ORDER
FOR OIL FIELD DISCHARGES TO LAND
GENERAL ORDER NUMBER ONE

This Information Needs Sheet describes information needed to prepare a Notice of Intent (NOI) to obtain coverage under the General Order. A NOI shall consist of:

1. **State Form 200.** A completed State Form 200, which is available at: http://www.waterboards.ca.gov/publications_forms/forms/docs/form200.pdf.
2. **An application fee.** Dischargers not operating under waste discharge requirements (WDRs) need to submit an application fee that serves as the first annual fee. The initial fee shall be based on a threat to water quality (TTWQ) and Complexity (CPLX) rating of 3C and applicable surcharges as described in Title 23, California Code of Regulations (CCR), section 2200. The Dischargers with existing WDRs do not need to submit an application fee unless annual fees are due during the application process.
3. **A technical report.** The technical report shall characterize all waste generation, treatment, storage, reuse and disposal activities applicable to the specific Facility that will be covered under the General Order. The technical report shall be prepared by a California registered civil engineer or engineering geologist. Applicants are advised to inquire with the Central Valley Water Board staff before performing investigations and/or preparing the technical report to ensure that the report will be complete.

After Central Valley Water Board staff review of the NOI, staff will determine the appropriate TTWQ and CPLX rating and additional fees may be required. If the information in the NOI demonstrates that the coverage under the General Order is appropriate, the Central Valley Water Board's Executive Officer (Executive Officer) will authorize coverage under the General Order by issuing Notice of Applicability (NOA). The NOA will describe appropriate monitoring and reporting requirements and site specific information.

TECHNICAL REPORT PREPARATION

Please note the following tips to expedite the NOI preparation and facilitate Central Valley Water Board staff review process:

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1. Providing the information in the same order as the listed below for technical report will help to expedite the NOI review process. Staff will use this as a checklist.
2. If any of the information is missing or incomplete, the NOI will be deemed incomplete and the process (and your project) will be delayed until all of the required information is submitted. You will be notified in writing of the NOI status within 30 days of the NOI submittal. If the NOI is incomplete, the additional information that is required to complete the NOI will be specified in the notification.
3. All numerical data presented in tables and calculations performed using spreadsheets should be provided in digital form (MS Excel compatible spreadsheet) as well as hard copy.
4. If some of the information listed below can be found in a previous technical report prepared by a California registered professional, the NOI can incorporate the report as an appendix, but the NOI text must specify where in the report the required information can be found. However, if appended reports contain information that conflicts with the body of the NOI, it may cause further delays.

✓	A. Facility Information:
	1. Is this an existing or new oil and gas production facility or expansion or startup of existing facility with discharges of produced wastewater (effluent) to pond(s)?
	a. If this is an existing facility (began discharge to land prior to 26 November 2014), the Discharger can apply for coverage under the general orders and the facility is exempt from requirements of the California Environmental Quality Act (CEQA)(Pub. Resources Code, § 21000 et seq.). Therefore, the Discharger does not need to produce evidence of compliance with CEQA.
	b. If this is a new facility (did not begin discharge to land prior to 26 November 2014) or expansion or startup of an existing facility, the Discharger can apply for individual WDRs instead of coverage under the general orders.
	c. If the Discharger has questions about a. or b. or permitting in general contact Central Valley Water Board staff at (559) 445-5116 for guidance.
	2. Is this facility currently regulated under individual or general WDRs issued by the Central Valley Water Board?
	a. If so, provide the WDRs order number and a copy of the WDRs.
	b. If not, provide the name of the local agency that issued the current operating permit and the number of years ponds have been in use as a method of

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	disposal.
	3. Provide a copy of any other permits that reference or relate to the discharge of oil field produced wastewater treatment, storage, disposal, and containment systems. This includes Use Permits and any other relevant permits (e.g., Division of Oil, Gas, and Geothermal Resources (DOGGR) disposal well permits, facility permits, etc.).
	4. Provide the following information for the oil and gas production facility and related treatment, storage, and/or disposal units:
	a. Section, Township, and Range.
	b. Street address of the facility (provide street name and distance from nearest cross street if there is no street number), if applicable.
	c. The approximate latitude and longitude of the facility and its components (treatment, storage tanks or tank battery, ponds, disposal wells, etc.).
	d. County and Assessor's Parcel Numbers, if applicable.
	5. Provide a detailed description of the facilities that generate wastewater, and all wastewater conveyance, treatment, and disposal systems. Use site plans and conceptual drawings as appropriate to illustrate locations and typical construction. Include all treatment processes. Provide the following maps, plans, and illustrations:
	a. A facility location map showing local topography; all wells (including producing, injectors, disposal, monitoring, and domestic/agricultural supply wells, etc.); the production, treatment, and disposal facility locations; and boundaries, streets, and surface water features (including natural drainages, seasonal streams, storm water drainage ditches, irrigation canals, and irrigation/tailwater ditches, etc.).
	b. A process flow schematic for the entire treatment, storage, and disposal system. Include existing and proposed flow monitoring devices and sampling locations proposed to determine compliance with the General Order.
	c. A scaled map for production, treatment, storage, disposal facility site plan and acreage. Identify the locations of all the containment structures.

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	d. A scaled map showing the limits of all the production wastewater treatment, storage and disposal areas. If disposal methods include combination use of ponds or disposal wells or other methods, identify all the locations on the scaled map.
	6. For each wastewater treatment, storage, disposal pond, and containment structure, provide the following information:
	a. Identification (name) and function of the structures.
	b. Surface area, depth, and volumetric capacity at two feet of freeboard for the ponds.
	c. Height (relative to surrounding grade), crest width, interior slope, and exterior slope of each berm or levee.
	d. Materials used to construct each berm or levee (e.g., containment structures and ponds).
	e. Description of the engineered liner, if any. Include a copy of the Construction Quality Assurance (CQA) Report if one was prepared.
	f. Overflow prevention features for each structure.
	g. Operation and maintenance procedures for each structure.
	h. Storm water runoff management methods, applicable for each structure.
	7. Projected monthly water balances demonstrating adequate containment capacity in storage structures (e.g., ponds and secondary containments) for both the average rainfall year and the 100-year return period total annual precipitation, including consideration of at least the following:
	a. Base line wastewater production to the pond and any inflow sources, if applicable.
	b. A minimum of two feet of freeboard in each pond at all times (unless a registered civil engineer determines that a lower freeboard level will not cause overtopping or berm failure).
	c. Historical local pan evaporation (monthly average values).
	d. Local precipitation data with the 100-year return period annual total distributed monthly in accordance with mean monthly precipitation patterns.
	e. Disposal system hydraulic loading rates distributed monthly in accordance with expected seasonal variations based on evaporation rates.

	f. Projected long-term percolation rates (including consideration of percolation and the effects of solids buildup in unlined ponds or containment structures).
	g. Submittal of a water balance capacity analysis demonstrating that the as-built hydraulic capacity of the facility (i.e., tank battery and pond storage capacity) is consistent with the flow limits based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
	B. Wastewater Treatment, Storage, and Disposal Systems For The Facility:
	1. A description of all the sources and types of wastewater flowing into the treatment, storage, and disposal facility, including:
	a. A list of oil leases or individuals or entities that use the wastewater treatment, storage, and disposal system.
	b. The number of permitted active and idle production wells (which produce oil, water, or gas) for each oil lease and the associated total monthly fluid production for each type of fluid (oil, gas, and produced wastewater) for each lease since 2013, broken out into monthly flows.
	c. The method(s) of oil field reservoir drives (e.g., primary or enhanced oil recovery (EOR) drive such as steam flood, water flood, etc.).
	d. A list of wastewater treatment units that treat the produced wastewater that is discharged to ponds or to land.
	2. For any chemicals or additives used in the exploration and production of oil, and the treatment of produced wastewater, provide the following:
	a. A detailed accounting of all the chemicals and additives used that could enter the wastewater, the reservoir, and/or produced wastewater stream (e.g., acids, bases, salts, surfactants, emulsion breakers, etc.), and a description of how and where in the production or wastewater stream they are deployed. Calculate the volumes of each individual chemical and additive used on a quarterly basis and describe any seasonal variability in chemical usage.
	b. Report any hazardous wastes that may be generated at the facility and certify that all hazardous wastes will be disposed of in accordance with State and federal laws and will not be commingled with wastewater.
	3. Characterize each wastewater stream type that discharges to the oil and gas production facility using the constituent list provided in Table I of Monitoring and

	Reporting Program R5-2017-XXXX including (but not limited to) the following:
	a. Produced wastewater after production facility treatment, but prior to discharge to the pond (effluent), and within pond.
	b. If the facility receives produced wastewater from other leases, or individuals, or entities, or properties or from different reservoirs, characterize each produced wastewater stream prior to mixing with other produced wastewaters and prior to treatment.
	c. Identify all other sources of wastes prior to mixing with produced wastewater and characterize each waste stream independently (e.g., reverse osmosis brine streams, steam generator blow down, etc.).
	4. Demonstrate maximum monthly average effluent flow to each pond that occurred between 26 November 2004 and 26 November 2014 and the basis for the effluent flow limit. Consider dry weather flows vs. peak flows and seasonal variations, if applicable. Include the technical basis for the flow limit (e.g., design treatment capacity; hydraulic capacity of system components; and demonstrated (historical) effluent storage/disposal capacity).
	5. A narrative description of treatment and storage system operation and maintenance procedures to be employed, including those associated with effluent storage and disposal.
	6. The names and contact numbers for production treatment facility operators and facility supervisors and the hours that the facility is staffed.
	7. Provide preventive and contingency measures for controlling spills and accidental discharges in production facility:
	a. Provide any spill prevention plans. The spill prevention plan should provide specific measures to effectively control any spills or failures in the production facility with supporting documents, a facility schematic, and flow diagrams that show that a spill to the secondary containment areas could only occur during emergency or catastrophic conditions.
	b. A description of proposed alarm notification systems, emergency wastewater storage facilities, secondary containment system, and other means of preventing treatment system bypass or failure during reasonably foreseeable overload conditions (e.g., peak flows, power failure, pipeline blockage, etc.).

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	Consider both potential problems at the treatment, storage and disposal systems and within the conveyance systems (e.g., flow lines).
	c. Provide description of flood and frost protection measures (structural and operational) employed at the facility.
	8. Describe all solid wastes generated at the facility and discuss how they are handled and disposed of. Volumes, chemical and physical characteristics, and final disposition of each waste stream (e.g., land application, compost, landfill) must be described. If solid wastes are treated or disposed of on-site, a waste management plan for those wastes must be included. The waste management plan shall include the following:
	a. A description of solids generation rates, on-site treatment and handling systems, and short-term storage procedures.
	b. A description of measures to be used to control runoff or percolation from the solids as they are transferred, stored, and/or mixed, and a schedule that shows how and where all the solids will be land applied or removed from the site prior to the onset of the rainy season (1 October).
	c. Confirmation that solids removed for reuse within the lease area would be analyzed to indicate that they are non-hazardous. Handling and application practices that would ensure that solid wastes do not migrate once placed. Note: At least 180 days prior to any solid waste removal and disposal, the Discharger must submit a solids management plan for the Executive Officer's approval.
	d. See Provision E.6 of the General Order for additional information.
	9. If the Discharger plans to apply produced wastewater for dust control or construction activities at the facility, the Discharger shall submit a management plan that includes:
	a. Technical justification that the dust control or construction activities are best practicable treatment or control and protective of surface waters and groundwater, and a demonstration that discharges will not create nuisance or pollution conditions.
	b. Provide constituent of concern concentrations and loading rates, frequency of wastewater applications, wastewater runoff control measures in-place, and a detailed aerial map of the field and facility clearly identifying areas of wastewater applications including acreage, nearest water ways, and seasonal drainage courses. Note: The Discharger shall submit the management plan 90 days prior to the anticipated

	discharges and the Executive Officer approval of the plan should be prior to commencement of the wastewater application.
	c. See Provision E.5 of the General Order for additional information.
	10. If Discharge Prohibition A.5 of the General Order applies to the Discharger for discharge of produced wastewater from wells that have been stimulated as defined by CCR title 14, section 1761; then the Discharger must satisfy the requirements of the General Order Provision E.7 by submitting a draft Work Plan to come into compliance with this prohibition. See Provision E.7 of the General Order for additional information.
	C. Antidegradation Analysis:
	1. An antidegradation analysis that evaluates the proposed discharge’s consistency with State Water Resources Control Board Resolution 68-16, <i>Policy with Respect to Maintaining High Quality Waters of the State</i> . This policy, known as the antidegradation policy, prohibits a regional board from allowing degradation of high quality water unless the Board makes specific findings. If the discharge is expected to degrade high quality waters, the Board must demonstrate that the degradation is consistent with the maximum benefit to the people of the state, that the discharge will not unreasonably affect present and anticipated beneficial uses of the water, that the discharge will not result in water quality less than that prescribed in applicable water quality control policies, and that the treatment system results in the “best practicable treatment or control” of the constituents of concern. In addressing the antidegradation policy, the NOI shall include:
	a. An identification of the beneficial uses of the groundwater in the vicinity of the discharge. Beneficial uses are designated in the applicable water quality control plan.
	b. An identification of the applicable water quality objectives (i.e., identify applicable Maximum Contaminant Levels or other waste concentration levels that cause odors or impair the taste of groundwater designated as suitable for municipal and domestic beneficial use, identify salinity thresholds that will be protective of groundwaters designated as suitable for agricultural use).
	c. An identification of waste constituents currently found in groundwater at concentrations lower (of better quality) than the applicable water quality objectives. Waters where a constituent is found at concentrations lower than the applicable water quality objective are considered “high quality waters” under the antidegradation policy. It is important to note that water can still be considered high quality water even when other constituents are found at concentrations higher (of worse quality) than the applicable water quality objectives.

	<p>d. An evaluation of how the proposed discharge may degrade groundwater that has been identified as a high quality water. The evaluation shall compare the concentrations of waste constituents in the discharge with the concentrations of these constituents in underlying groundwater and with applicable water quality objectives, and must be conducted on a constituent-by-constituent basis. Include in this evaluation waste constituents that may not be present in elevated concentrations in the discharge when applied to land, but may be released to groundwater as a result of the discharge (e.g., nitrate, iron, manganese, arsenic).</p>
	<p>e. When the above analysis finds that high quality waters will be degraded by the discharge, the following is also needed:</p>
	<p>(1) A justification why the degradation is consistent with the maximum benefit to the people of the state. It is appropriate to consider “important social and economic development” when evaluating whether the degradation is consistent with the maximum benefit to the people of the state.</p>
	<p>(2) With respect to the treatment or control measures that will be implemented, evaluate how these measures reduce the discharge’s potential to degrade groundwater and how these measures ensure that the discharge does not cause or contribute to existing conditions of groundwater degradation, where the degradation is due to controllable factors.</p>
	<p>(3) Include a description of additional control measures that <u>could</u> further reduce the degradation associated with the discharge, and discuss why it is or is not “practicable” to implement these measures at the site. This can include analysis relating the viability of the project to the expense of the pollution control technology (i.e., the project would not be economically viable if higher-cost treatment was required by the Board).</p>

	<p>D. Planned Changes in the Existing Facility or Discharge:</p>
	<p>1. Describe in detail any and all planned changes in the facility or discharge, addressing each of items listed in Section B above.</p>
	<p>E. Local and Site-Specific Conditions for Surface, Soil, and Groundwater: (Illustrate with maps as appropriate)</p>
	<p>1. Neighboring land uses.</p>
	<p>2. Typical crops grown (if agricultural area).</p>
	<p>3. Water supply sources, including agricultural, municipal, and domestic well(s) within one mile radius of the property where the ponds are located.</p>

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	4. Terrain and site drainage features.
	5. Nearest surface water drainage course.
	6. FEMA floodplain designation(s).
	7. Average Annual precipitation (inches).
	8. 100-year 365-day precipitation (inches).
	9. Reference evaporation (monthly and annual total).
	10. Pan evaporation (monthly and annual total).
	11. A description of the types and depths of soil underlying ponds, containment structures, and/or other effluent disposal areas. Include a copy of the geotechnical report and/or Natural Resources Conservation Service (NRCS) soil report. Include at least the following information:
	a. Depth of unsaturated soil when groundwater is closest to the surface.
	b. Soil types based on site-specific information, sampling locations (accurately measured and recorded), description and results of percolation tests or other tests used to estimate soil long-term infiltration and percolation rates. Include depth, thickness, and soil horizons. Soils must be described at a minimum of five feet below the bottom of any disposal unit. Provide information on soil types underlying ponds and/or wastewater application areas from the ground surface to the saturated zone. Soils information should include data from on-site borings, logged by a California registered geologist or civil engineer, and may include referenced data from published sources.
	c. Bedrock type and condition encountered in disposal area, if any.
	d. A scaled map depicting soil/rock types and test locations.
	12. Provide the following information about hydrogeology and groundwater:
	a. Stratigraphy, groundwater elevation and gradient, transmissivity, and influence of all recharge and pumping sources (site conceptual model).
	b. Elevation and gradient of first encountered groundwater at the facility.
	c. Depth to highest anticipated groundwater based upon onsite measurements taken during wet season.
	d. Shallow groundwater quality or first encountered groundwater for typical waste constituents, up and down gradient of disposal ponds. See Table II of General Order Monitoring and Reporting Program for constituent list to analyze.

	e. Information on monitoring well locations, construction details, and locations of any geological features (e.g. aquitards, subterranean channels, faults) and aquifer characteristics.
	f. Summary of historical groundwater monitoring results (last 5 years for existing facilities).
	F. Industrial Storm Water General Permit:
	<p> On 1 April 2014, the State Water Resources Control Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) (Industrial Storm Water General Permit) specifying waste discharge requirements for discharges of storm water associated with industrial activities. Order 2014-0057-DWQ became effective 1 July 2015 and required all applicable industrial dischargers to apply for coverage prior to the effective date. Because storm water at oil and gas production wastewater discharge facilities is captured and contained on-site or comingled with produced wastewater before being discharged to ponds or production containment areas (i.e., secondary containment), storm water will generally contain residual oil or produced wastewater. This General Order prohibits discharge from leaving pond areas or secondary containment areas and entering waters of the United States. See the following link for more information: </p> <p> http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/ </p> <p> 1. Many industrial facilities are required to obtain coverage under the Industrial Storm Water General Permit. Provide evidence that the facility is exempt from or has applied for coverage under the Industrial Storm Water General Permit. </p>
	G. Department of Water Resources Well Standards:

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The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to Water Code section 13801, apply to all monitoring wells.

1. Provide information as to whether existing monitoring wells at the facility were constructed in accordance with the Department of Water Resources Well Standards.

See the following link for more information:

http://www.dpla.water.ca.gov/sd/groundwater/california_well_standards/well_standards_content.html