

C/007/039 Incoming

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Canyon Fuel Company, LLC
Dugout Canyon Mine
P.O. Box 1029
Wellington, Utah 84542



September 15, 2011

Coal Regulatory Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

RE: Hydrographs for Wet and Dry Year Sampling, Dugout Canyon Mine, Canyon Fuel Company, LLC, C/007/039, Carbon County, Utah

Dear Sirs:

Enclosed please find five copies of a revision to the Mining and Reclamation Plan to add hydrographs to the permit comparing the wet and dry year samples. The dry year flow samples were taken in 2002 beginning April 1 and concluding August 31. Twenty-two flow samples were collected, one flow sample per week during the five month period. During 2011 (wet year) twenty two flow samples were taken again beginning April 1 and concluding August 31.

The analyzed high flow and low flow samples taken in 2002 have been incorporated into the DOGM database. The 2011 high flow sample analyses have been incorporated into the data base, however the analysis of the low flow samples have not all been completed by the laboratory, but will be incorporated once they are received.

If you have any questions please call us either at (435) 636-2869 or (435) 636-2873.

Sincerely yours,

Vicky S. Miller
Amanda Richard

Vicky S. Miller
Amanda Richard

cc: Dave Spillman

RECEIVED

SEP 16 2011

DIV. OF OIL, GAS & MINING

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: Canyon Fuel Company, LLC

Mine: Dugout Canyon Mine

Permit Number: C/007/039

Title: Revision to the M&RP to incorporate Hydrographs

Description, Include reason for application and timing required to implement:

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- | | |
|---|---|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ <input type="checkbox"/> increase <input type="checkbox"/> decrease. |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 2. Is the application submitted as a result of a Division Order? DO# _____ |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 4. Does the application include operations in hydrologic basins other than as currently approved? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 6. Does the application require or include public notice publication? |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 7. Does the application require or include ownership, control, right-of-entry, or compliance information? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 9. Is the application submitted as a result of a Violation? NOV # _____ |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 10. Is the application submitted as a result of other laws or regulations or policies?
<i>Explain:</i> _____ |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11. Does the application affect the surface landowner or change the post mining land use? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 13. Does the application require or include collection and reporting of any baseline information? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15. Does the application require or include soil removal, storage or placement? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 16. Does the application require or include vegetation monitoring, removal or revegetation activities? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 17. Does the application require or include construction, modification, or removal of surface facilities? |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 18. Does the application require or include water monitoring, sediment or drainage control measures? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 19. Does the application require or include certified designs, maps or calculation? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 20. Does the application require or include subsidence control or monitoring? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 21. Have reclamation costs for bonding been provided? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 23. Does the application affect permits issued by other agencies or permits issued to other entities? |

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein

David Spillman
Print Name

Daniel Spillman, Engineering Manager
Sign Name, Position, Date

9/15/11

Subscribed and sworn to before me this _____ day of _____, 20____

Notary Public

My commission Expires: _____, 20____ }
Attest: State of _____ } ss:
County of _____ }

For Office Use Only: 	Assigned Tracking Number: 	Received by Oil, Gas & Mining <div style="text-align: center; border: 1px solid red; padding: 5px; color: red; font-weight: bold; font-size: 1.2em;"> RECEIVED SEP 15 2011 DIV. OF OIL, GAS & MINING </div>
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CHAPTER 7
HYDROLOGY

- 7-7 Undisturbed Watersheds Adjacent to Surface Facilities
- 7-8 Disturbed Area Watershed Boundaries
- 7-9 Dugout Creek Reclamation Details

LIST OF APPENDICES

Appendix

- 7-1 Water Rights Data
- 7-2 Groundwater Monitoring Data
- 7-3 Mayo and Associates Report
- 7-4 Monitoring Well Water-Level Data and Well Logs
- 7-5 USGS Streamflow and Water-Quality Data for Dugout Creek
- 7-6 UPDES Permit Applications
- 7-7 Surface-Water Monitoring Data
- 7-8 Sedimentation Pond Design Calculations
- 7-9 Diversion and Culvert Design Calculations
- 7-10 Hydrologic Design Methods
- 7-11 Reclamation Hydrology Calculations
- 7-12 Pace Canyon Fan Portal Site
- 7-13 Hydrographs

It should be noted that reliable data have been difficult to collect from the limited number of springs issuing from the Blackhawk Formation within the permit and adjacent areas. As a result, no springs issuing from this formation have been included in the long-term monitoring program.

The ground water monitoring and sampling protocols to be implemented are described in Table 7-4. These protocols are based on the probable hydrologic consequences (PHC) of mining as presented in Section 728 and Appendix 7-3 of this M&RP and the requirements put forth in the Division's regulations. Table 7-4 is the same as that presented in Coal Regulatory Program Directive Tech-004, with the exception that total hardness and total alkalinity are not included. Total hardness, which is primarily of concern in water supplies being developed for domestic use, was not added to the list because summer-home development of the permit area is not an identified post-mining land use. Total alkalinity was not added to the list because the baseline data indicate that acid-generating materials, which may affect the alkalinity of the water, are not present within the permit and adjacent areas.

The protocols set forth in Table 7-4 will be followed during years of normal precipitation as defined in the PHC. Wet or dry (not normal) years for the mine area are defined based on the Natural Resources Conservation Services snow-pack measurements as of March 1 for the Price River-San Rafael River Basin. A wet year occurs when the snow pack water content is greater than 110% of normal and a dry year when the snow pack is less than 70% of normal. After the permit is issued, the following monitoring protocol will be implemented for the first wet or dry year occurrence:

1. Weekly measurements of flow during the first wet year and the first dry year following permit issuance will be obtained. The purpose of these measurements will be to prepare base-flow hydrographs of the monitored springs. Flow measurements during the first wet year and the first dry year will be collected weekly between April 1 and August 31 as conditions permit.
2. Water samples will be obtained during high- and low-flow season in conjunction with the quarterly sampling, if applicable. The samples will be analyzed in accordance with Table 7-4 with the addition of tritium analysis.

In addition to the above regular monitoring, one water sample will be collected at each spring sampling point during low flow period every fifth year, during the year preceding re-permitting, to be analyzed for baseline parameters (Table 7-4).

Weekly measurements taken of the flow during 2011 represent the first wet year following the issuance of the permit. The first dry year weekly flow measurements were taken in 2002. Base-

flow hydrographs comparing the wet and dry year measurements have been included as Appendix 7-13.

Water samples were obtained during high- and low-flow season in conjunction with the quarterly sampling during the wet year (2011) and the dry year (2002). The samples were analyzed in accordance with Table 7-4 with the addition of tritium analysis. These analyses were incorporated into the UDOGM data base for 2002 and will be incorporated for the wet year (2011).

Groundwater was discovered discharging from old Gilson coal seam workings located on the east side of Dugout Canyon during construction of the Dugout Canyon Mine in September 1998. Prior to construction, this water seeped unnoticed through unconsolidated fill and into Dugout Creek. The water discharging from these old workings will be monitored on a quarterly basis for the parameters listed in Table 7-4 beginning in the fourth quarter of 1998. The monitoring point is labeled MD-1 on Plate 7-1.

Data will be collected from the Dugout Canyon Mine and Pace Canyon Fan Portal mine-water discharge point in accordance with the UPDES permits. No water will be discharged prior to obtaining the necessary UPDES permits. The monitoring requirements proposed herein, including the analytical parameters and the sampling frequency, may be modified in the future in consultation with the Division if the data demonstrate that such a modification is justified.

Data will be collected under the groundwater monitoring program every year following the completion of surface reclamation activities. During the post-mining period, water levels will be collected from the monitoring wells and data/samples will be collected from the identified springs once each year during September or October (i.e., the low-flow season while the sites are still accessible). Groundwater monitoring during the post-mining period will continue until bond release.

All groundwater monitoring data will be submitted to the Division by the end of the quarter following sampling. If analyses of any groundwater sample indicates noncompliance with the permit conditions, the permittee will promptly notify the Division and take immediate appropriate actions. UPDES reporting requirements will be met for the mine-water discharge points. The Snotel data used to determine "wet" or "dry" years, as described previously in this section, will be submitted with the first quarter water monitoring data beginning in the year 2001 or in the annual report.

Equipment, structures and other devices used in conjunction with monitoring the quality and quantity of groundwater in the permit and adjacent areas have been or will be installed, maintained, and operated in accordance with accepted procedures. Where feasible, this equipment will be removed or properly abandoned by the permittee when no longer needed.

Surface Water Monitoring. Surface water monitoring to be conducted in the permit and adjacent areas will consist of data collection from streams and sedimentation pond discharges. Locations of streams to be monitored are noted on Plate 7-1. The surface water monitoring plans presented herein were developed based on information presented in the PHC determination, the baseline hydrologic data, and the geologic data presented in Chapter 6 of this M&RP.

Station DC-1 will be monitored to evaluate surface-water conditions downstream from the proposed surface facilities. Stations DC-2 and DC-3 will provide data concerning background surface-water conditions immediately upstream from the proposed surface facilities. Stations DC-4 and DC-5 will be located at the Castlegate Sandstone-Blackhawk Formation contact and will provide data that will be used to determine the relationship between the Blackhawk Formation and the base flow of Dugout Creek.

PC-1a and PC-2 are located on Pace Creek and will be monitored to evaluate surface-water conditions up gradient and down gradient, respectively, of the permit area. Monitoring point (Fan) has been added on Pace Creek at a location approximately 600 feet upstream from the top of the Pace Canyon Fan facilities disturbed area boundary. Monitoring locations Fan and PC-2 will be monitored to evaluate surface water conditions up gradient and down gradient, respectively, of the Pace Canyon Fan facilities. RC-1 has also been established as monitoring point to obtain baseline data for future mine expansion. Baseline data was obtained from the aforementioned three sites (PC-1a, PC-2 and RC-1) for three years prior to initiating operational sampling.

PC-3 is located on Pace Creek below the confluence of an unnamed ephemeral drainage with Pace Creek (Plate 7-1). Degas Wells G-18, G-19 and the AMV road are located adjacent to the unnamed drainage at various elevations. Surface water monitoring location PC-3 was added during the permitting of the AMV road and Degas Wells G-18 and G-31, baseline data was not gathered for this monitoring location. The operational monitoring of PC-3 will begin the 4th quarter of 2007.

Protocols for surface-water monitoring within the permit and adjacent areas are:

- DC-1, FAN, PC-3 - Quarterly data collection in accordance with Table 7-5 (operational parameters). This table is the same as that presented in Coal Regulatory Program Directive Tech-004, with the exception that total hardness and total alkalinity are not included. As explained above, total hardness, which is primarily of concern in water supplies being developed for domestic use, was not added to the list because summer-home development of the permit area is not an identified post-mining land use. Total alkalinity was not added to the list because the baseline data indicate that acid-generating materials, which may affect the alkalinity of the water, are not present within the permit and adjacent areas.

- DC-2, DC-3, PC-1a, PC-2, and RC-1 - Quarterly data collection in accordance with Table 7-5. Collection of gain-loss hydrograph data during the first wet year and the first dry year following permit issuance. Wet and dry years will be defined as noted in the previous groundwater monitoring discussion. The hydrograph will be generated by collecting flow measurements during the first wet year and the first dry year on a weekly basis between April 1 and August 31 as conditions permit. Refer to Appendix 7-13 for hydrographs.
- DC-4 and DC-5 - Collection of gain-loss hydrograph data during the first wet year and the first dry year following permit issuance, as described above. Collect flow measurements during the first wet year and the first dry year on a weekly basis between April 1 and August 31 as conditions permit. Samples will also be collected for laboratory analyses during the first wet year and the first dry year following permit issuance. Wet and dry years will be defined as noted above. These samples will be collected during the high-flow and low-flow seasons. The samples will be analyzed for tritium and the operational parameters contained in Table 7-5. Refer to Appendix 7-13 for hydrographs.
- 323 - Quarterly data collection in accordance with Table 7-5.

In addition to the above regular monitoring, one water sample will be collected at each sampling point during low flow period every fifth year, during the year preceding re-permitting, to be analyzed for baseline parameters (Table 7-5).

The monitoring requirements proposed herein, including the analytical parameters and the sampling frequency, may be modified in the future in consultation with the Division if the data demonstrate that such a modification is justified. Data will be collected from the sedimentation pond discharge point in accordance with the UPDES permit. Data will be collected under the surface water monitoring program every year until bond release.

All surface water monitoring data will be submitted to the Division by the end of the quarter following sampling. If analyses of any surface water sample indicates noncompliance with the permit conditions, SCM will promptly notify the Division and take immediate appropriate actions. UPDES reporting requirements will be met for the sedimentation pond discharge point.

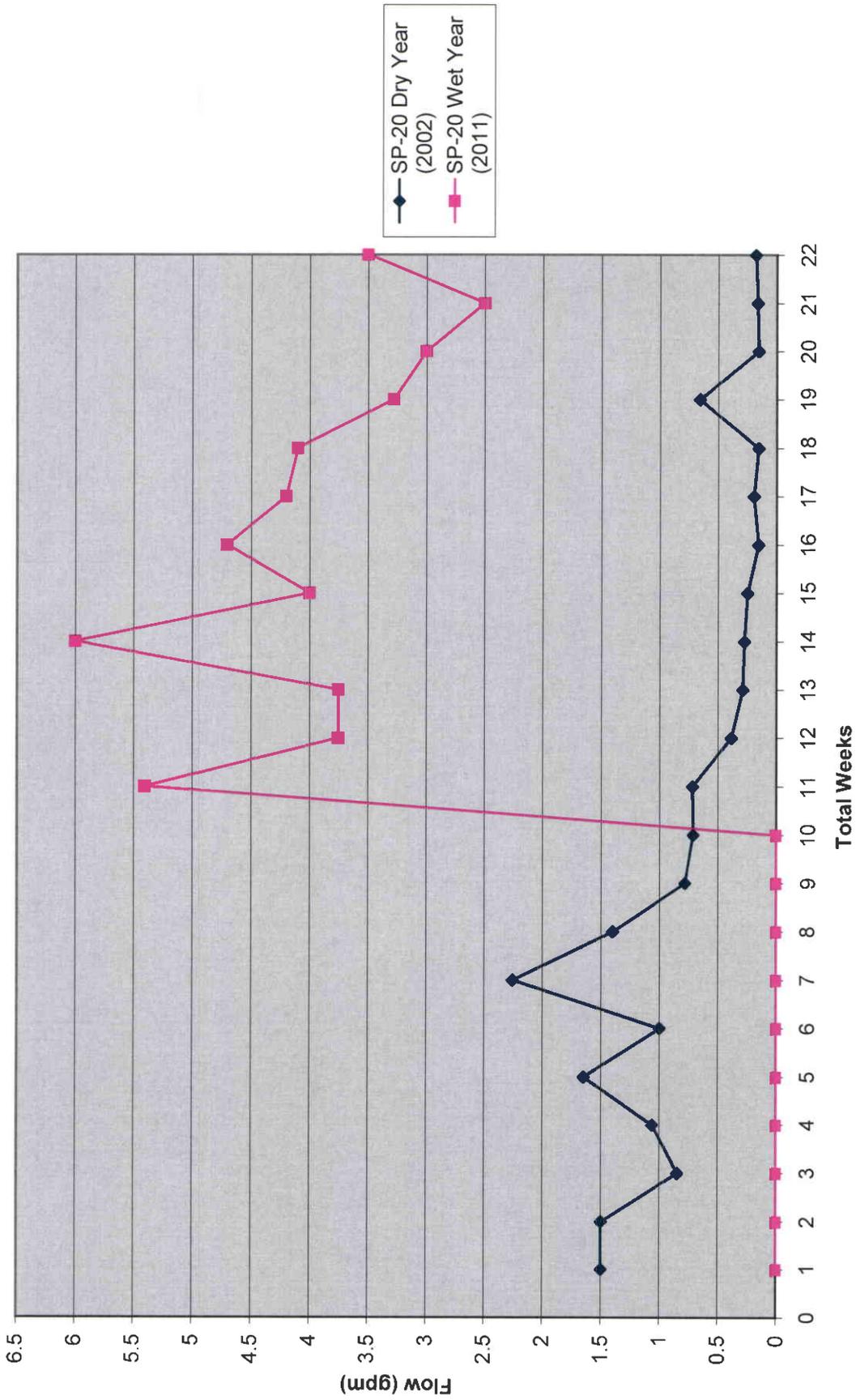
Equipment, structures and other devices used in conjunction with monitoring the quality and quantity of surface water in the permit and adjacent areas have been or will be installed, maintained, and operated in accordance with accepted procedures. Where feasible, this equipment will be removed or properly abandoned by SCM when no longer needed.

Monitoring and Mitigation Plan Pace Creek

APPENDIX 7-13

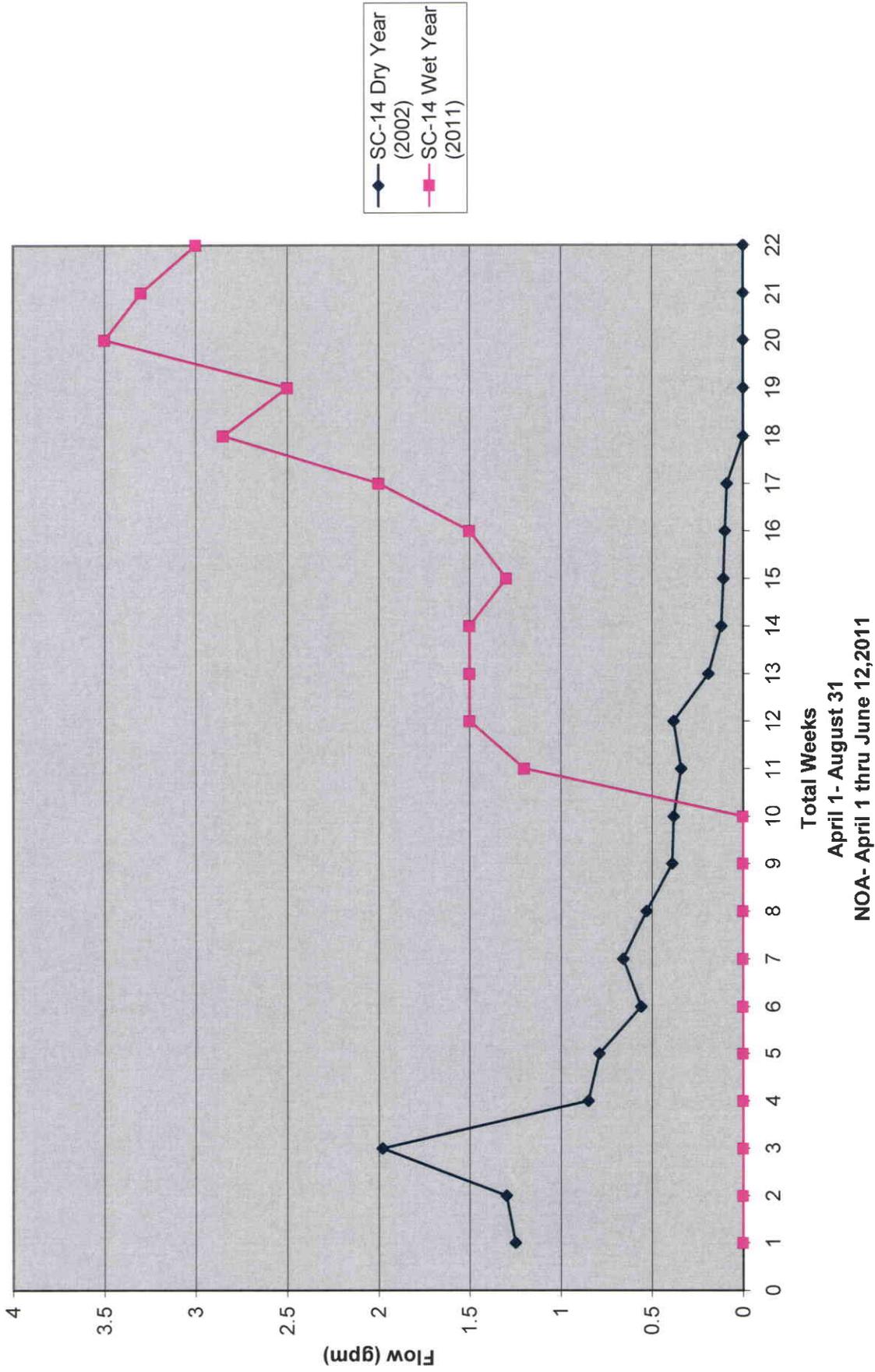
Hydrographs

Dugout Canyon SP-20 Dry Year vs. Wet Year

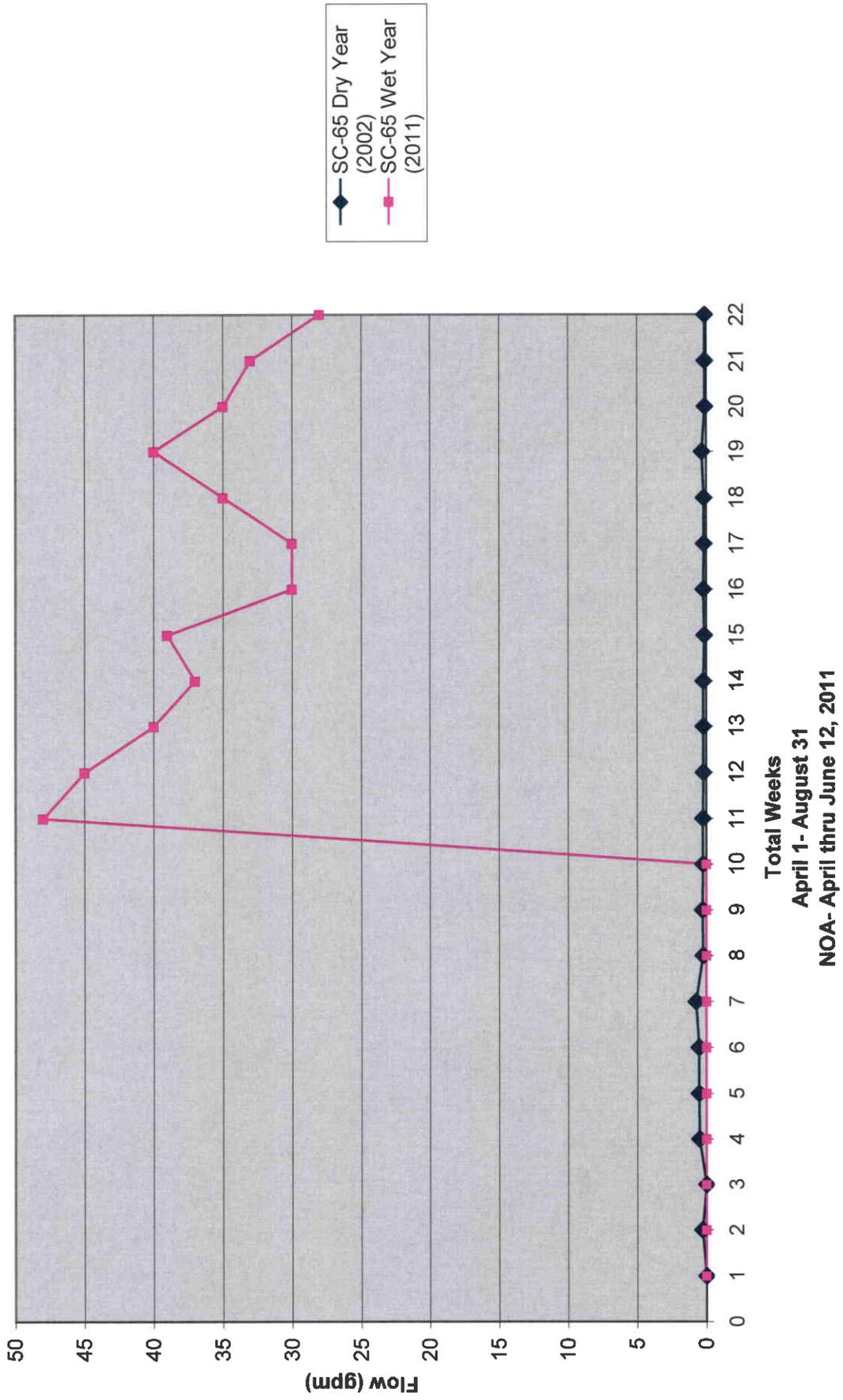


Total Weeks
 April 1 - August 31
 NOA- April 1 thru June 12, 2011

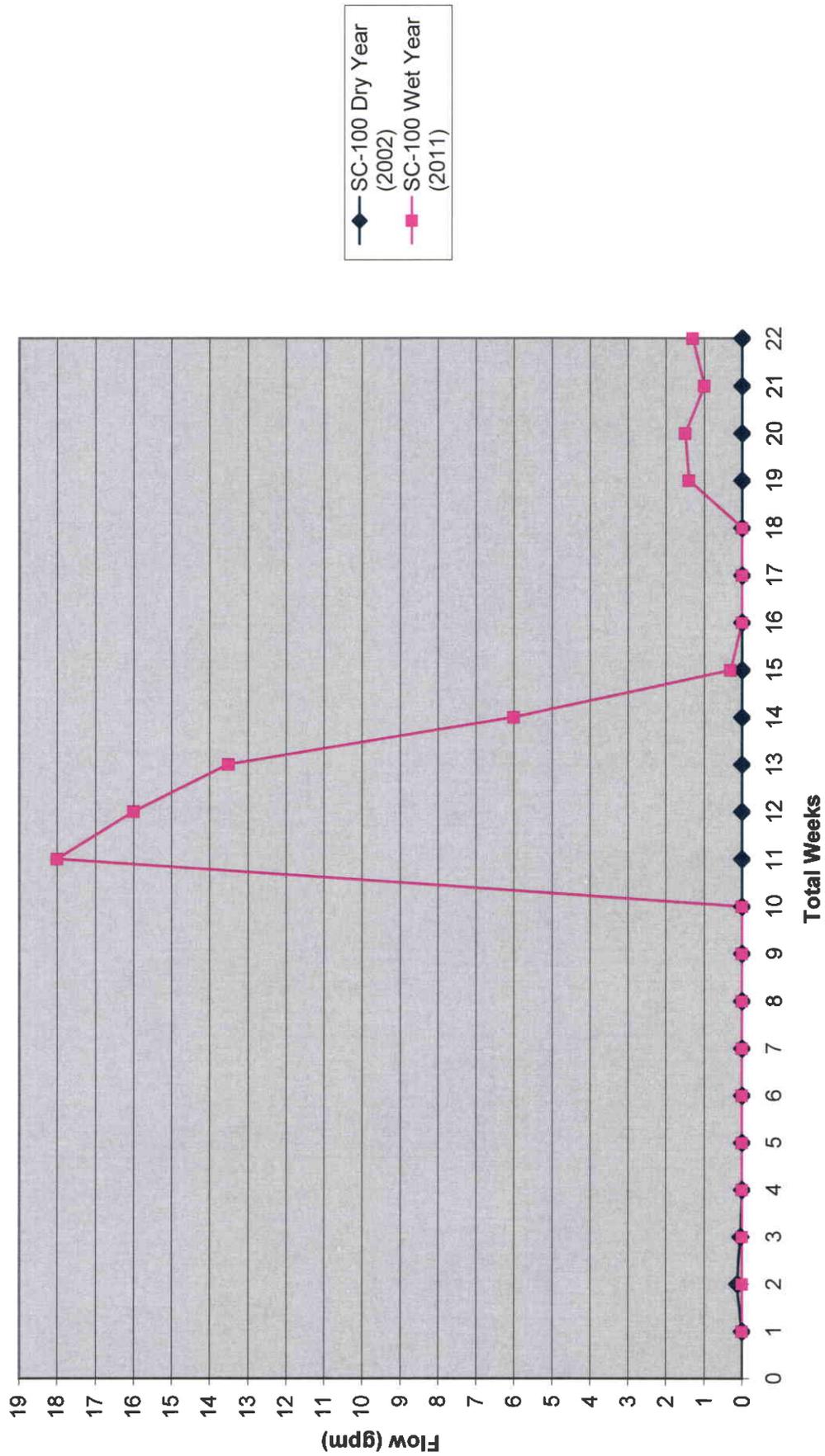
Dugout Canyon SC-14 Dry Year vs. Wet Year



Dugout Canyon SC-65 Dry Year vs. Wet Year



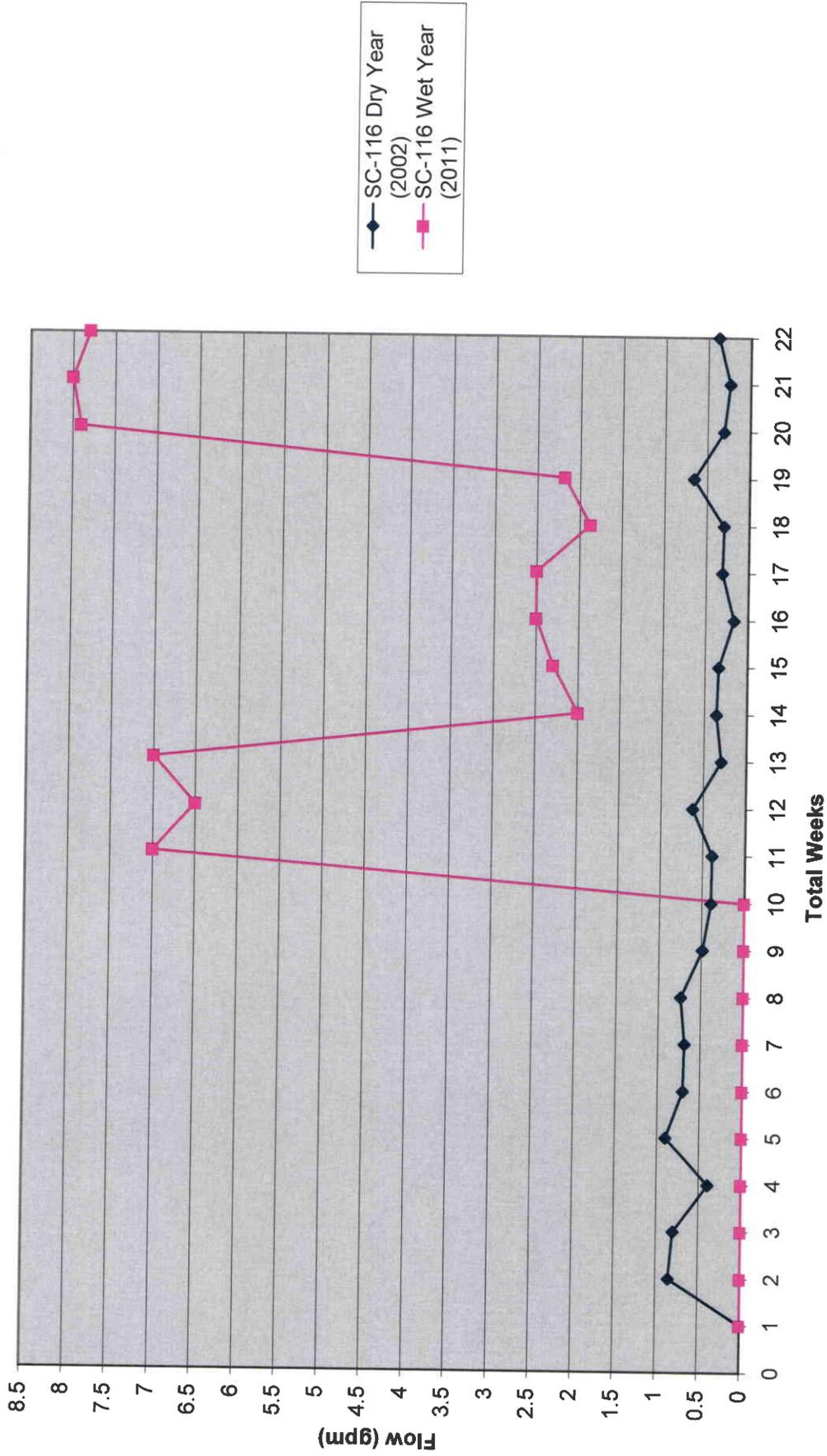
Dugout Canyon SC-100 Dry Year vs. Wet Year



Total Weeks
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 NOAA- April 1- June 12, 2011

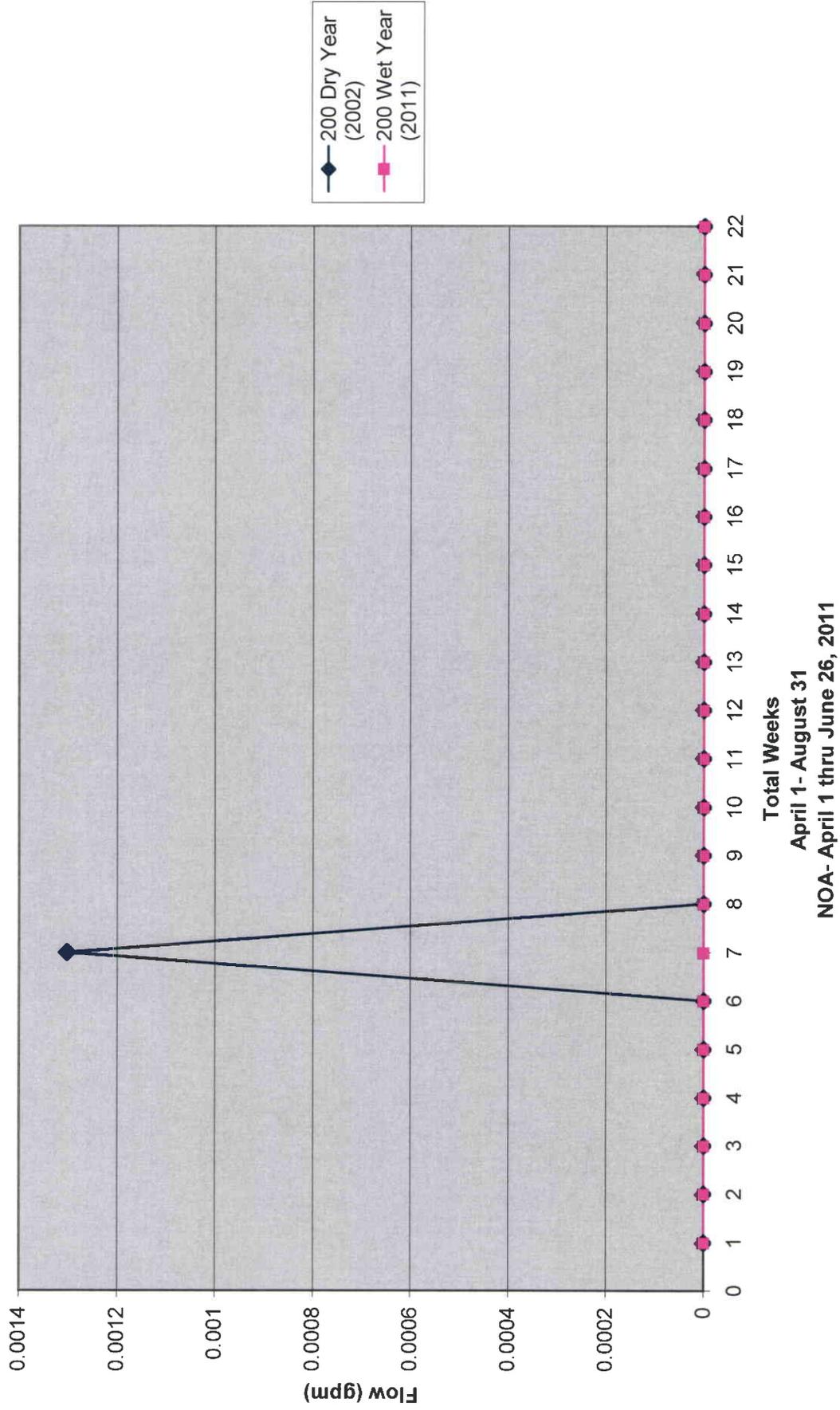
◆ SC-100 Dry Year (2002)
 ■ SC-100 Wet Year (2011)

Dugout Canyon SC-116 Dry Year vs. Wet Year

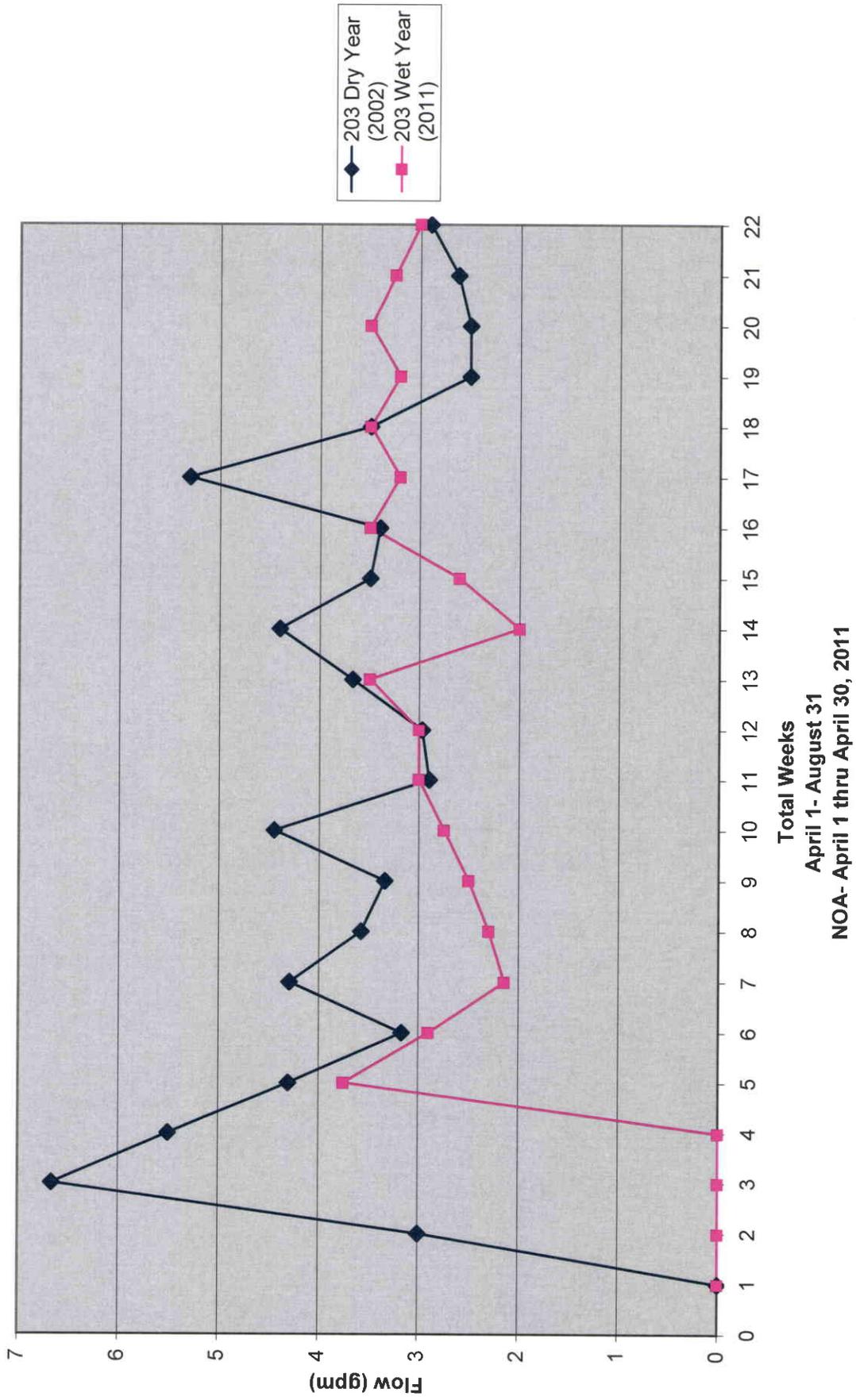


Total Weeks
 April 1- August 31
 NOA- April 1 thur June 12, 2011

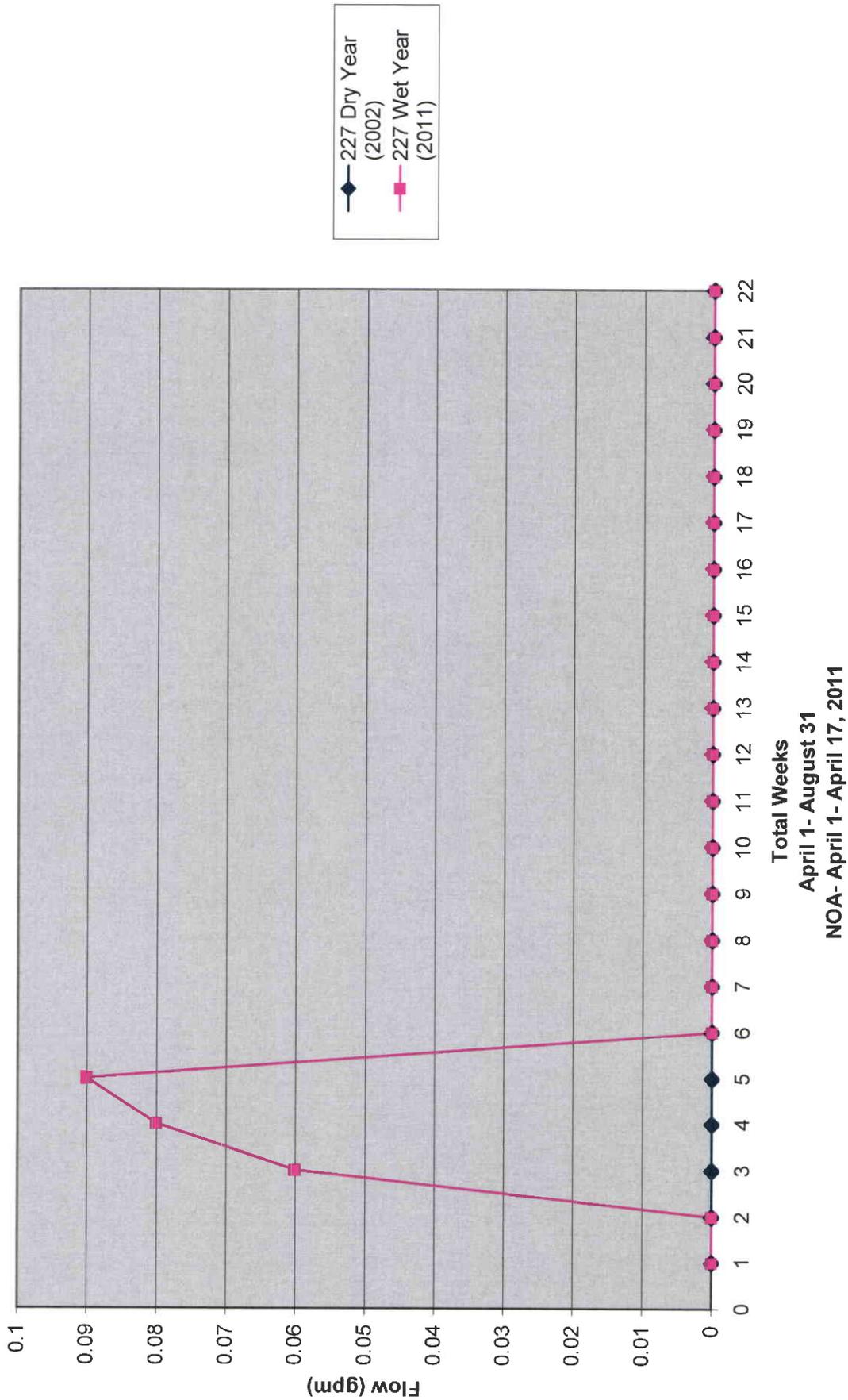
Dugout Canyon 200 Dry Year vs. Wet Year



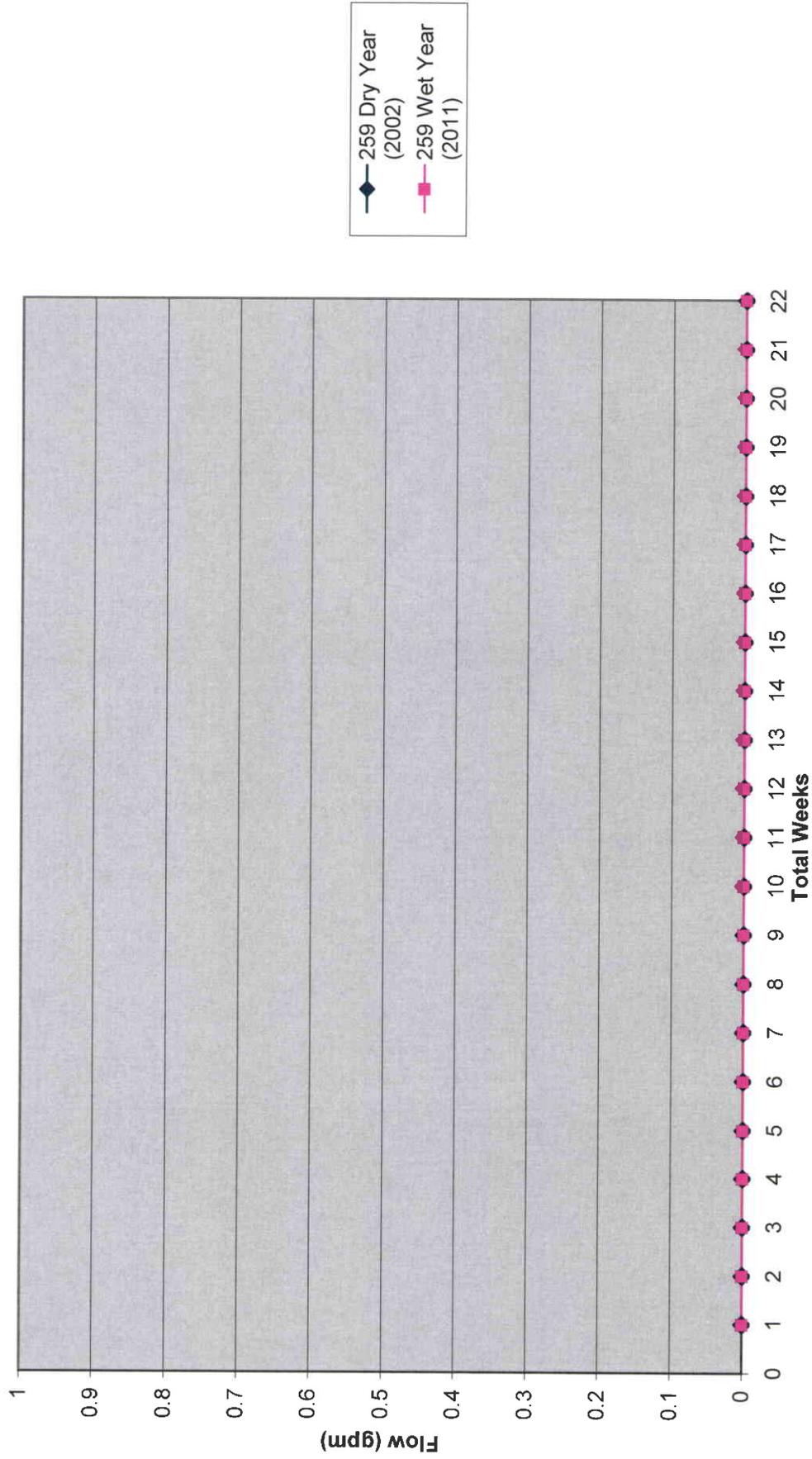
Dugout Canyon 203 Dry Year vs. Wet Year



Dugout Canyon 227 Dry Year vs. Wet Year



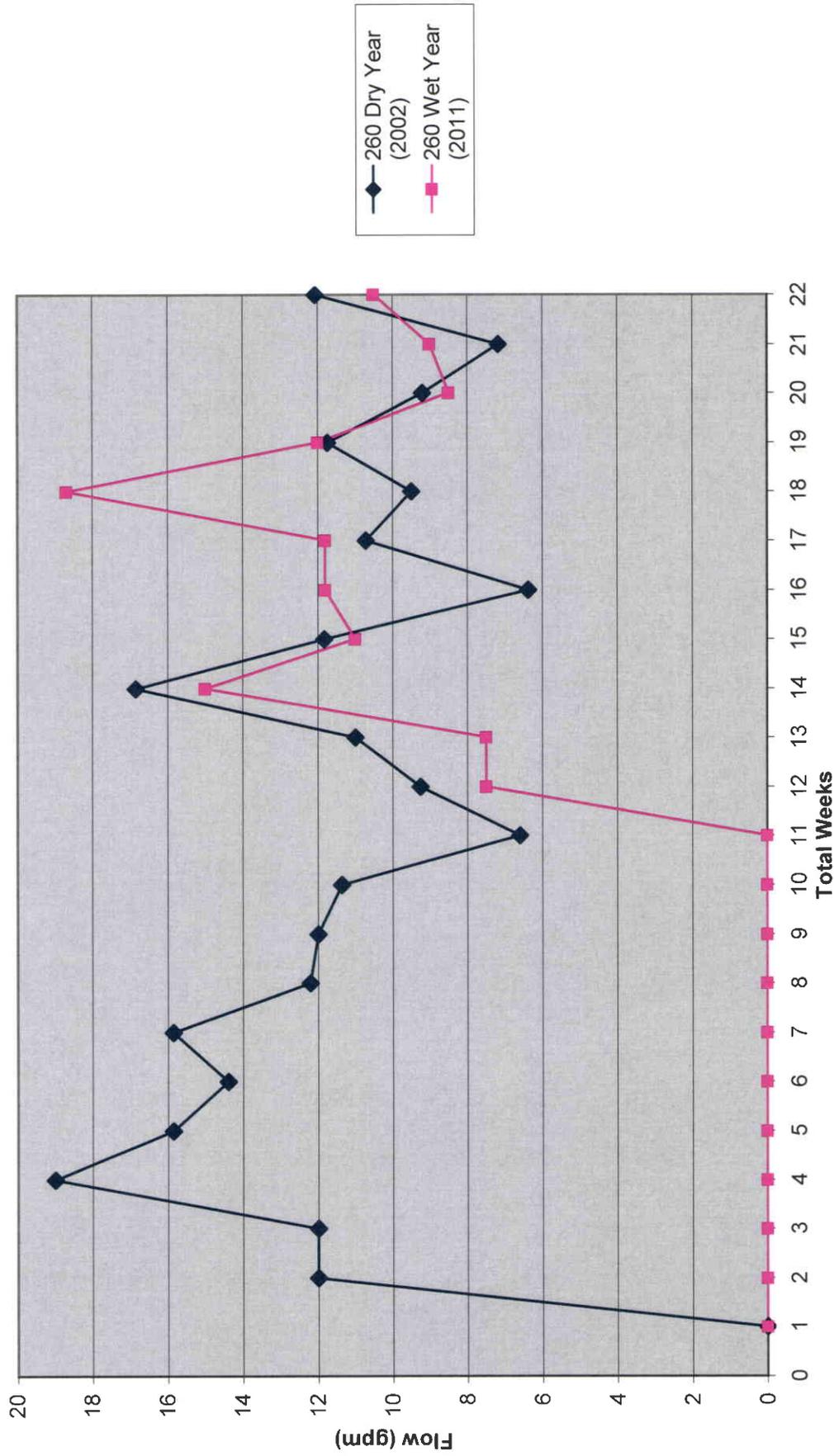
Dugout Canyon 259 Dry Year vs. Wet Year



April 1- August 31

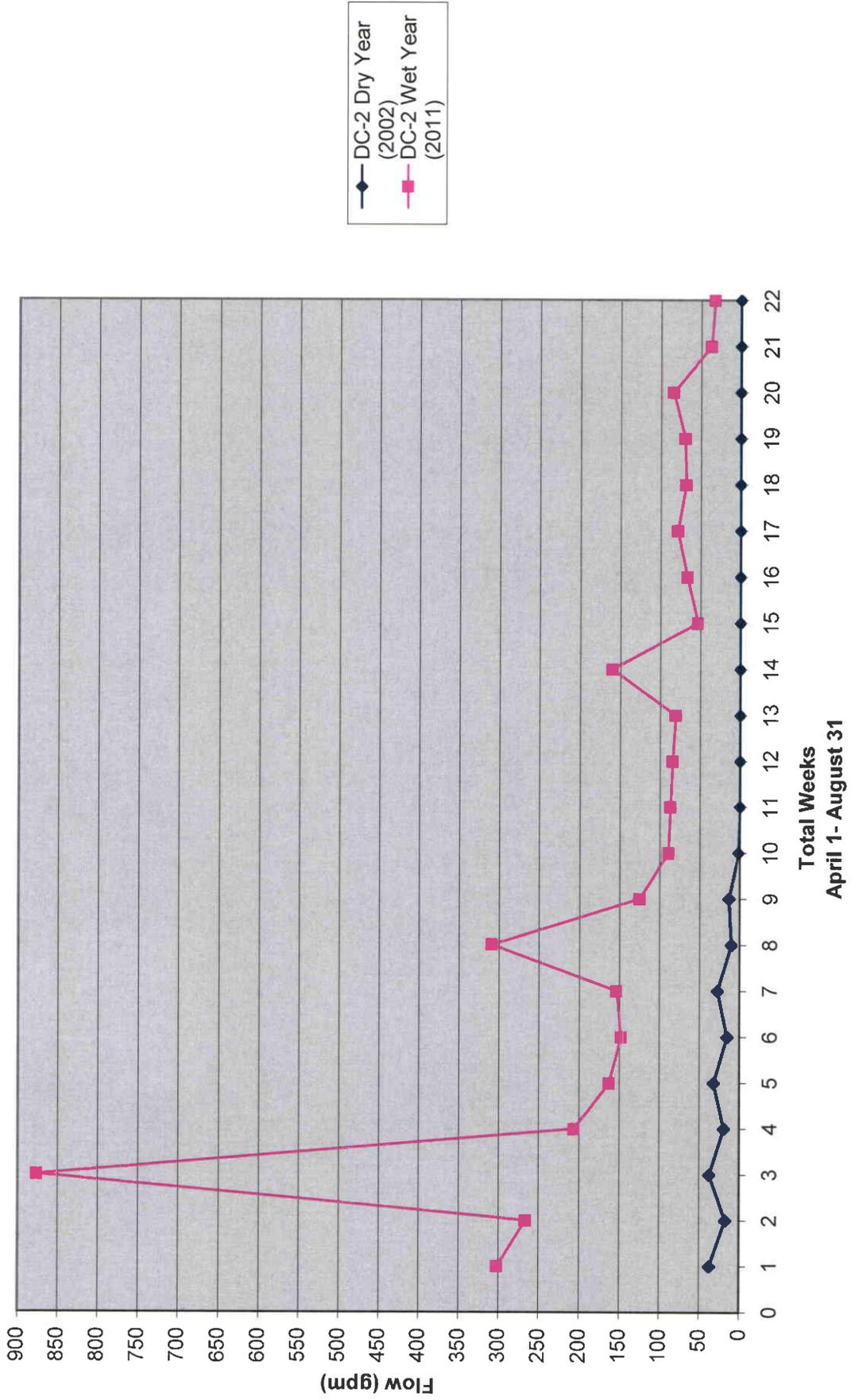
NOA- April 1 thru June 26, 2011

Dugout Canyon 260 Dry Year vs. Wet Year

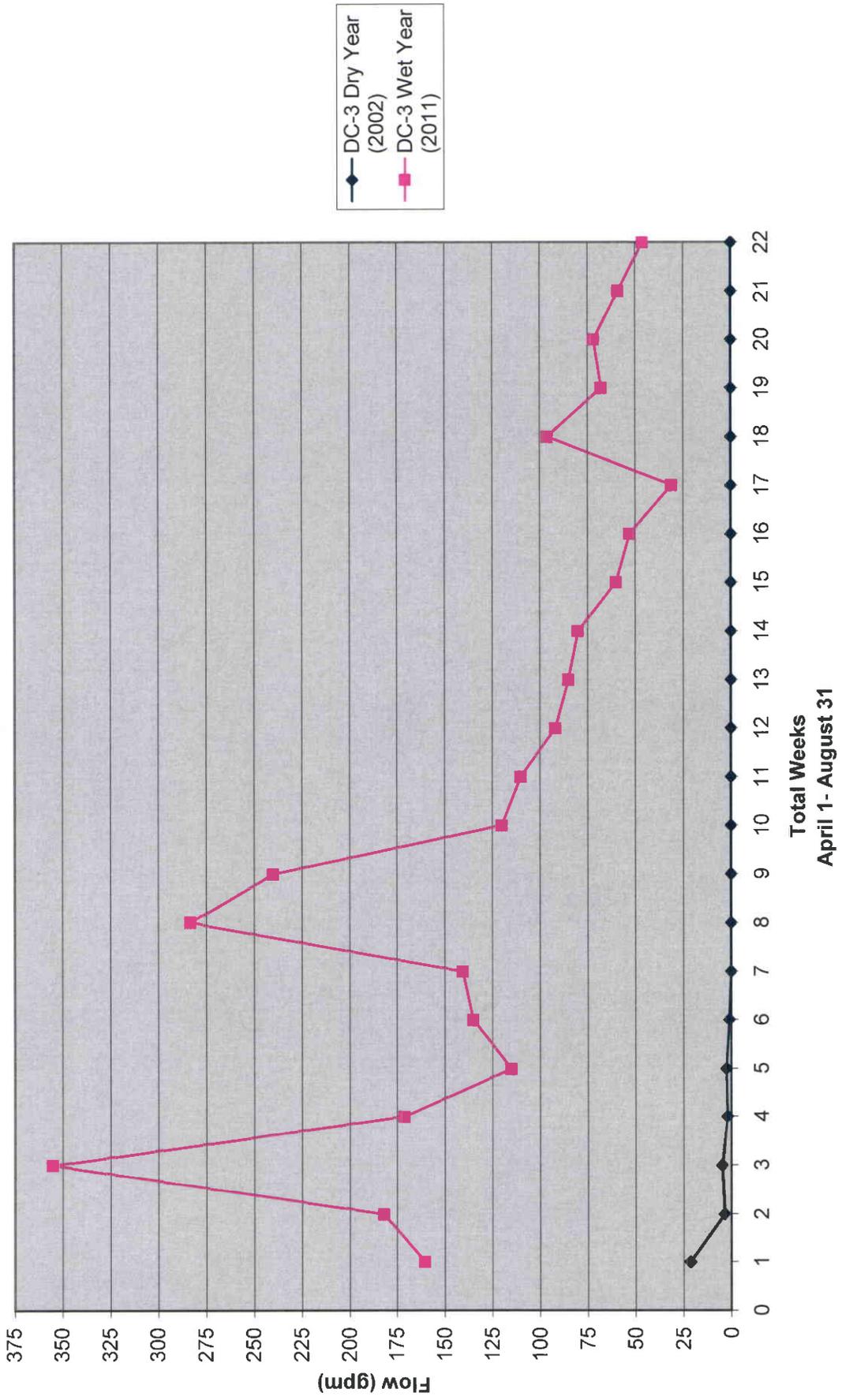


April 1 - August 31
NOA - April 1 thru June 19, 2011

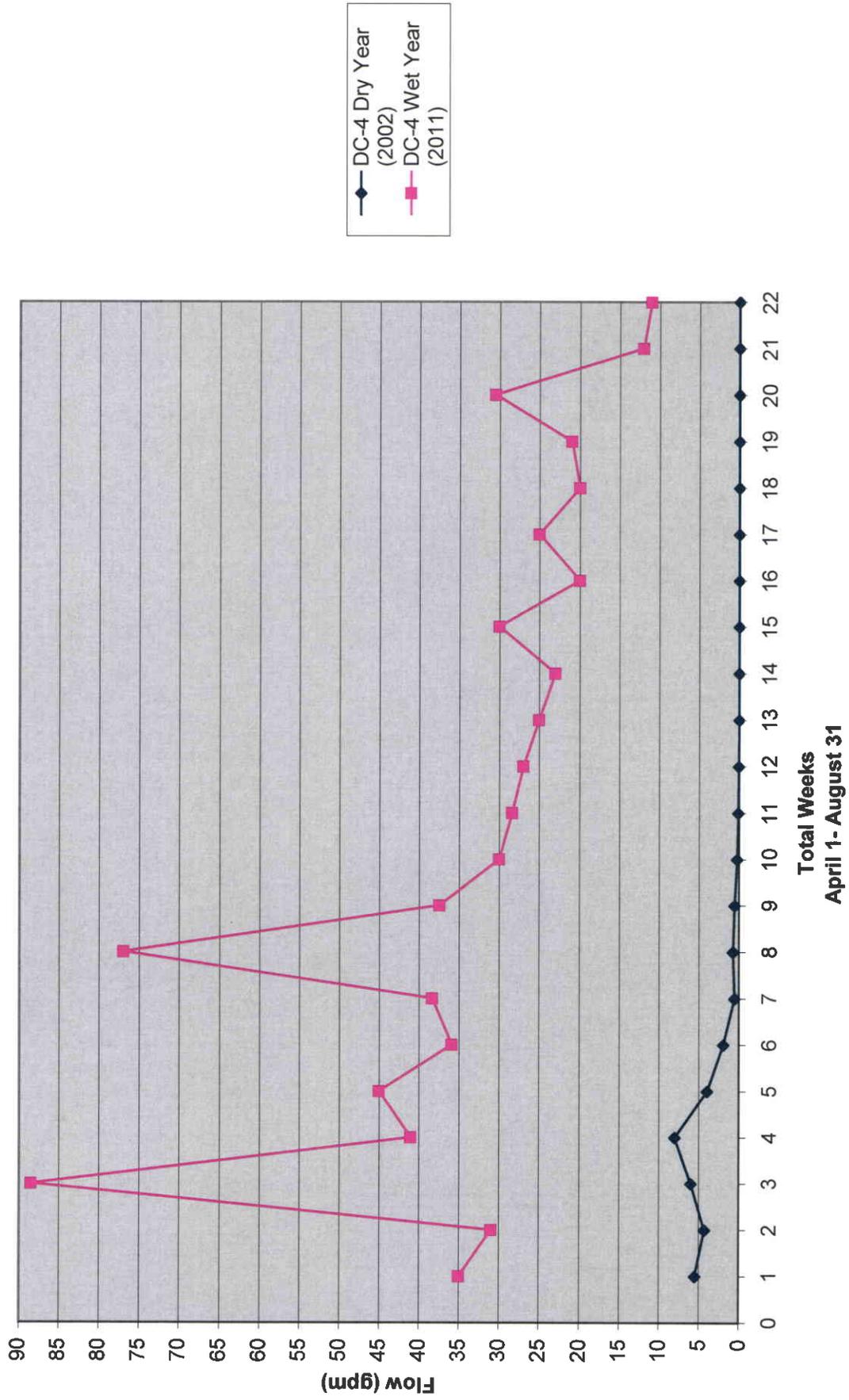
Dugout Canyon DC-2 Dry Year vs. Wet Year



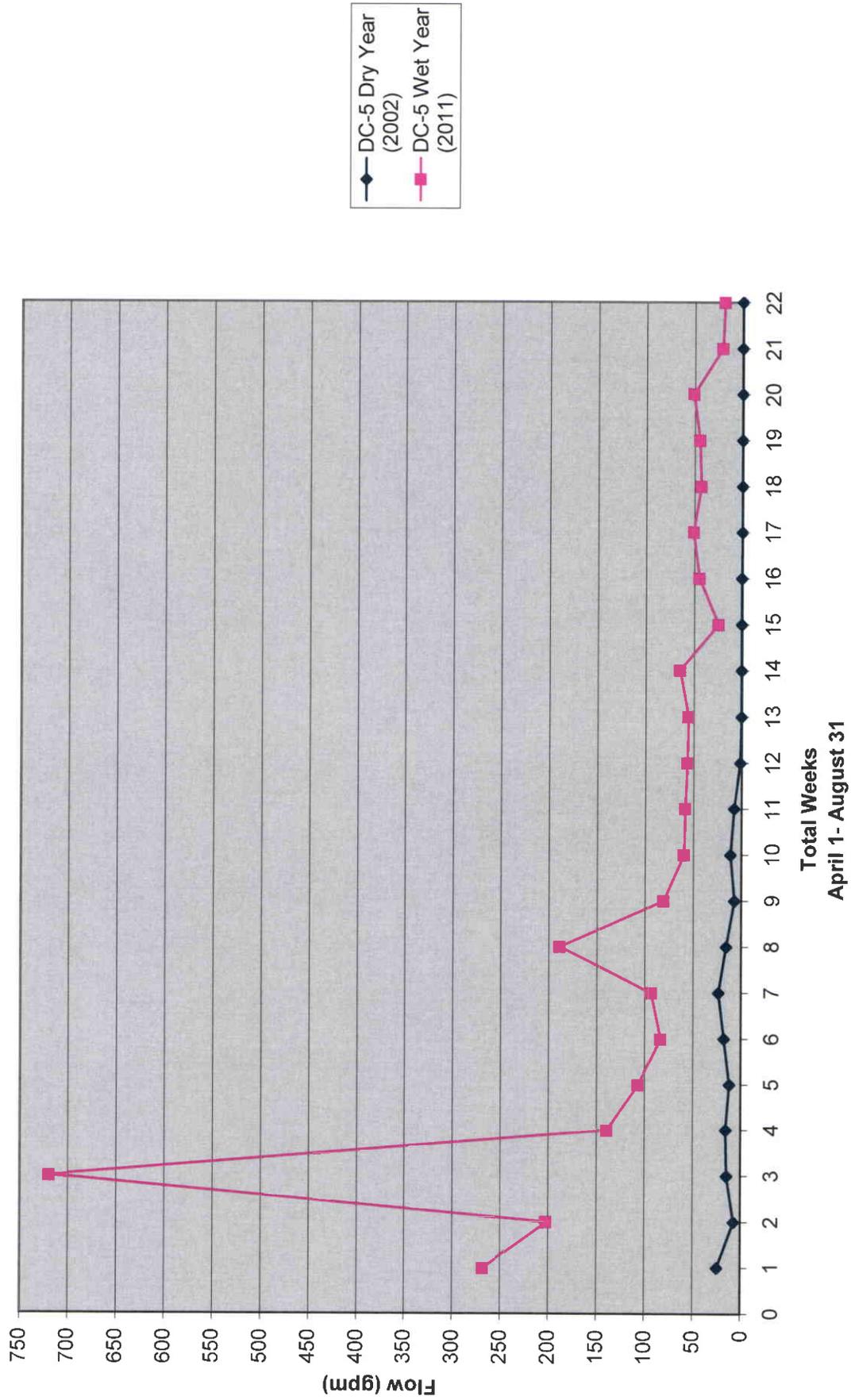
Dugout Canyon DC-3 Dry Year vs. Wet Year



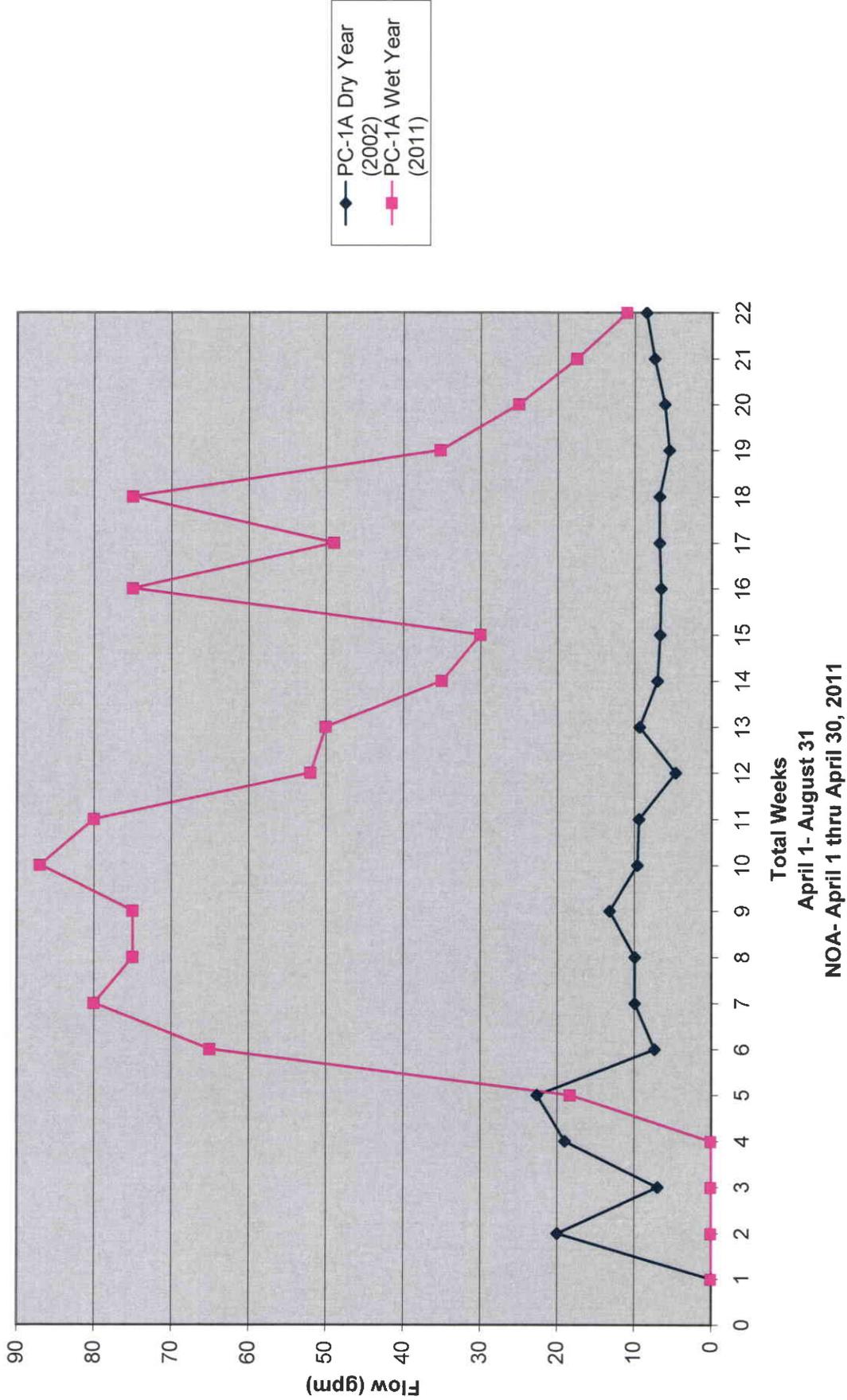
Dugout Canyon DC-4 Dry Year vs. Wet Year



Dugout Canyon DC-5 Dry Year vs. Wet Year

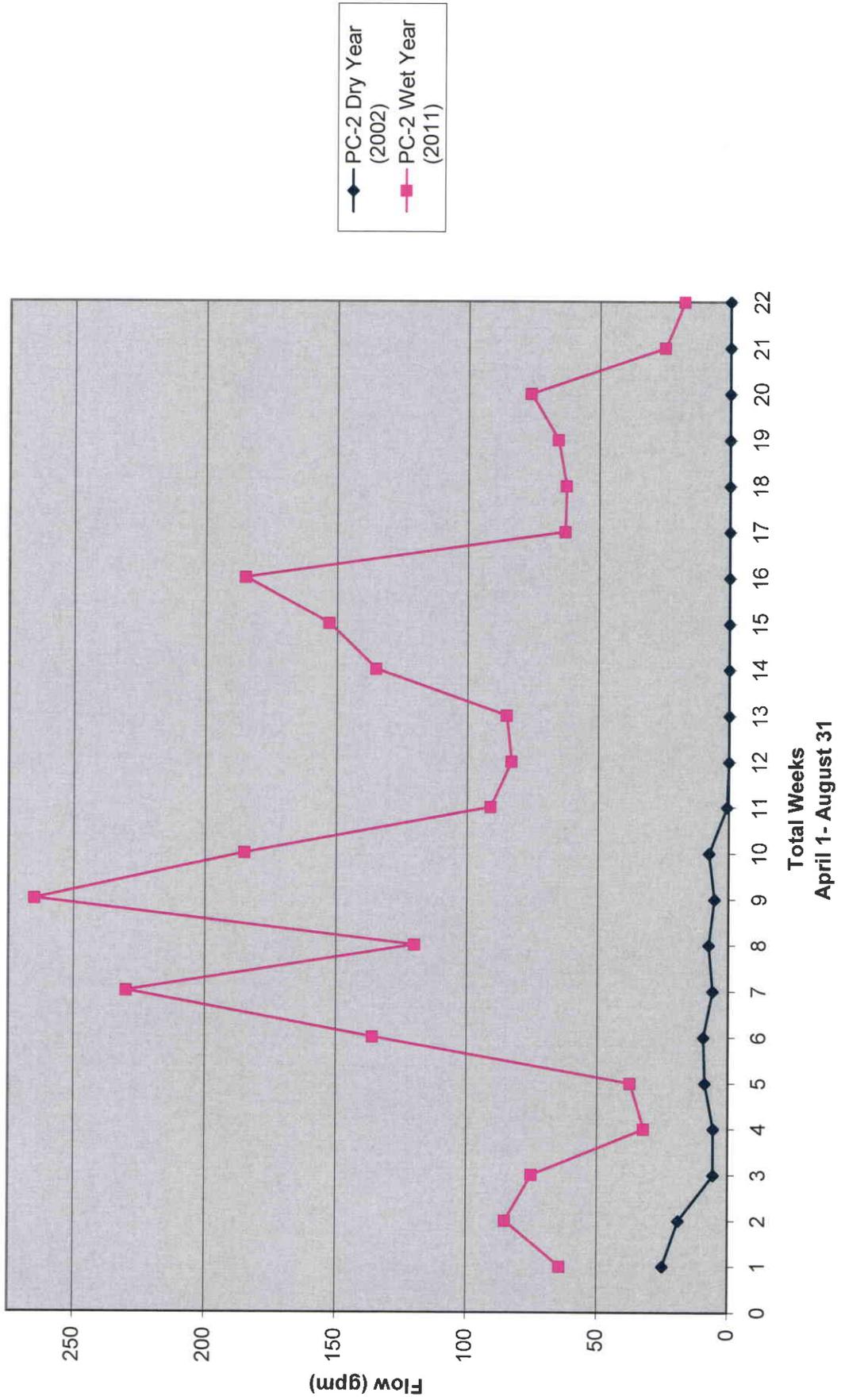


Dugout Canyon PC-1A Dry Year vs. Wet Year

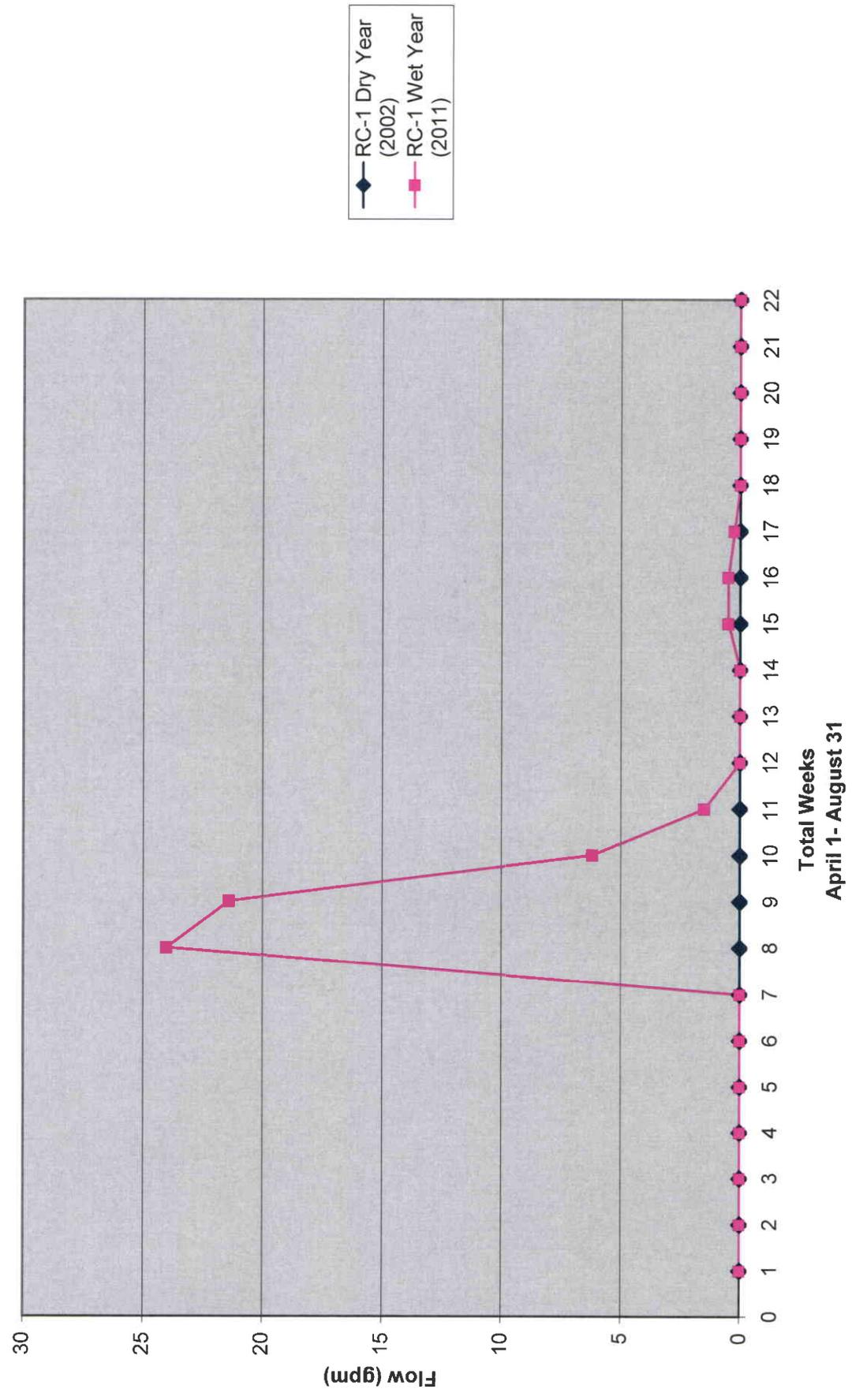


Total Weeks
 April 1 - August 31
 NOAA- April 1 thru April 30, 2011

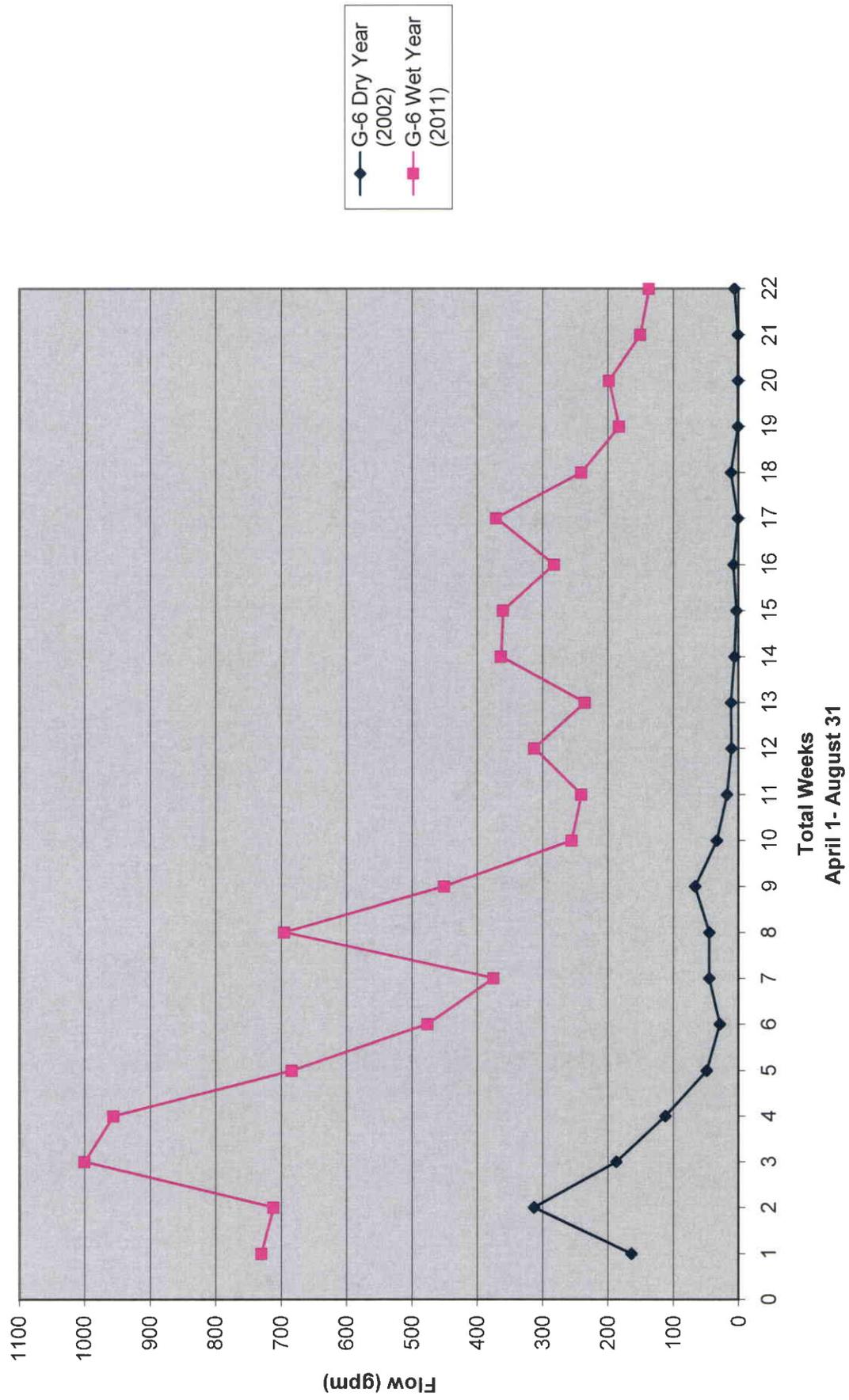
Dugout PC-2 Dry Year vs. Wet Year



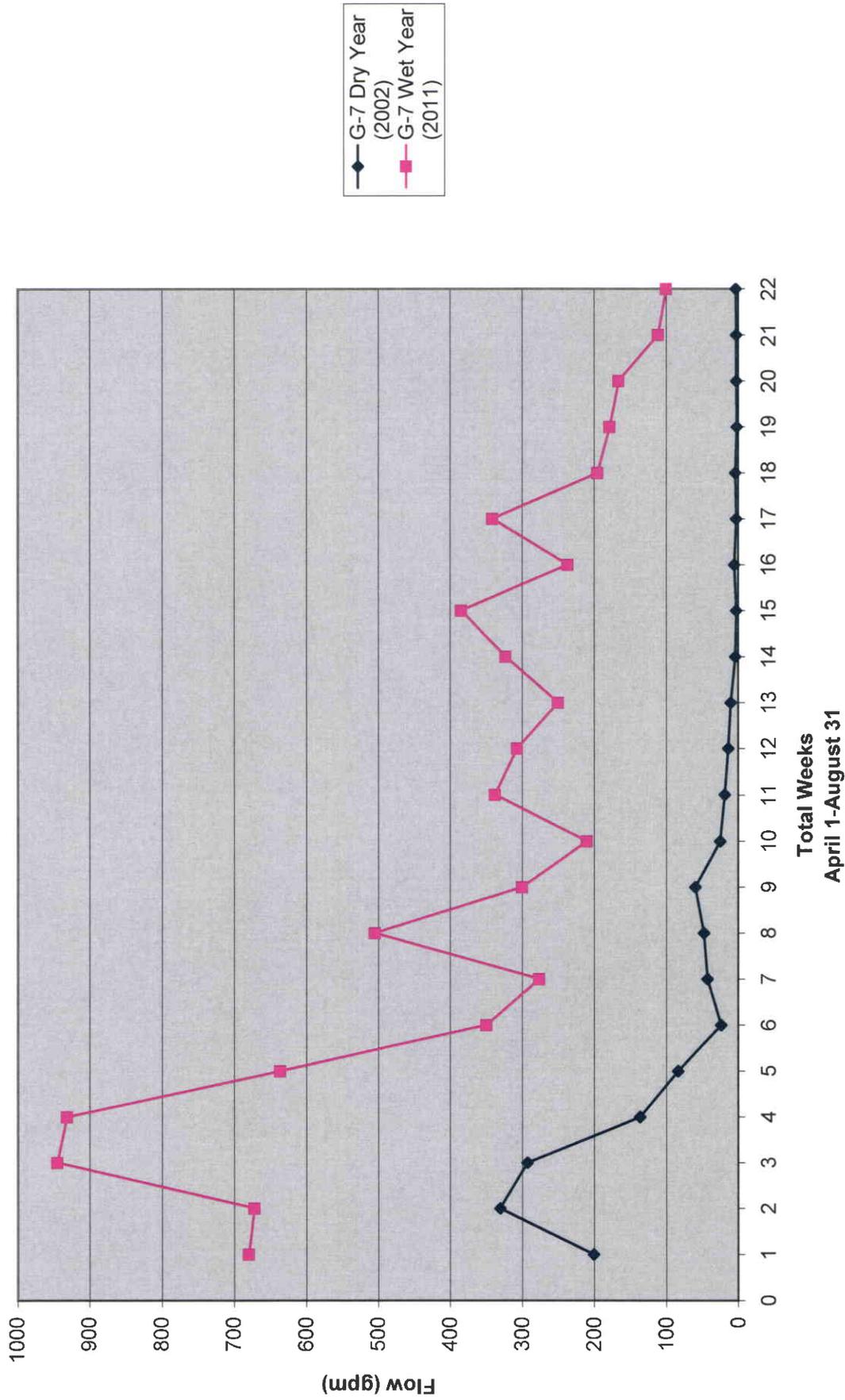
Dugout Canyon RC-1 Dry Year vs. Wet Year



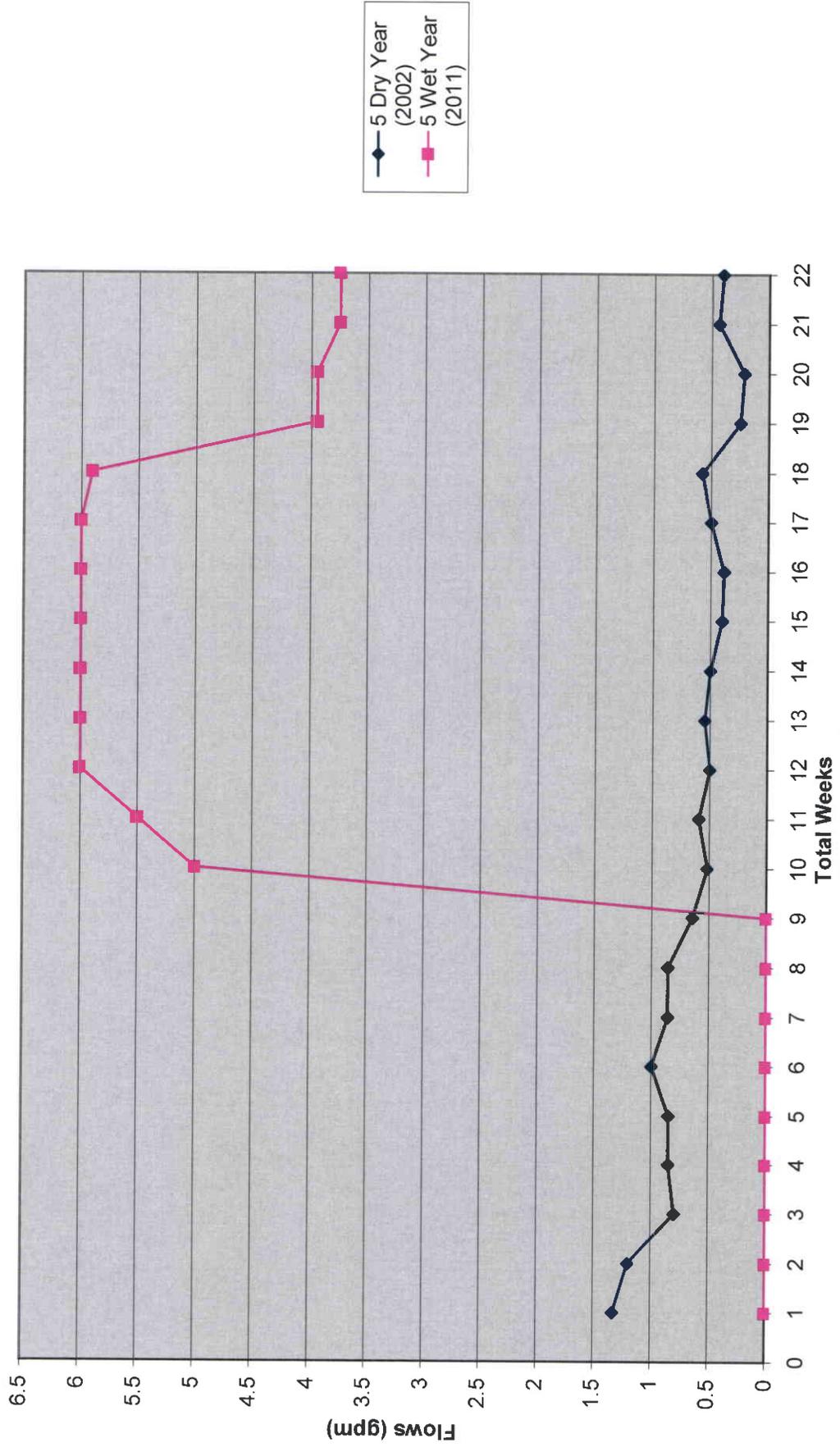
Soldier Canyon G-6 Dry Year vs. Wet Year



Soldier Canyon G-7 Dry Year vs. Wet Year

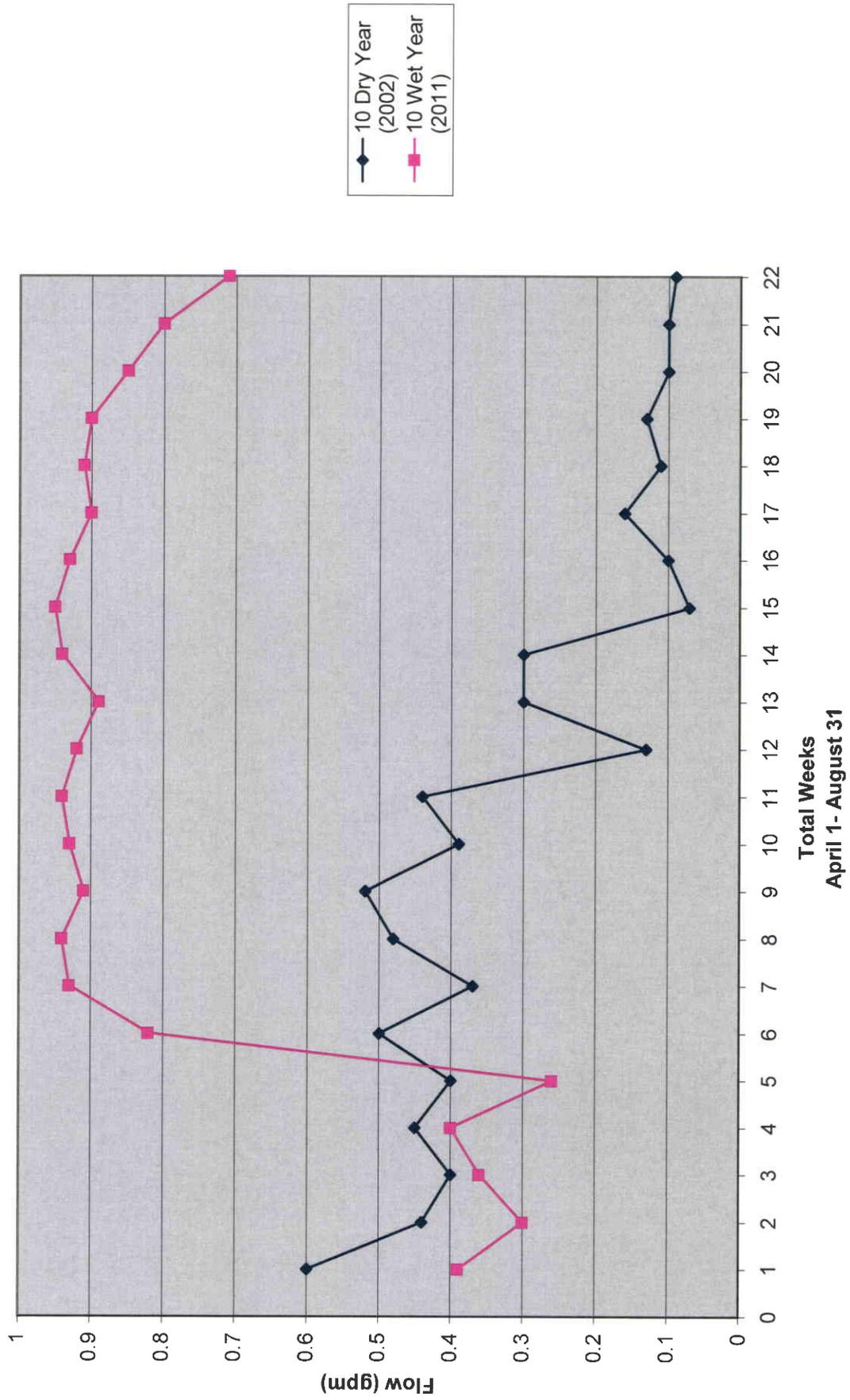


Soldier Canyon 5 Dry Year vs. Wet Year

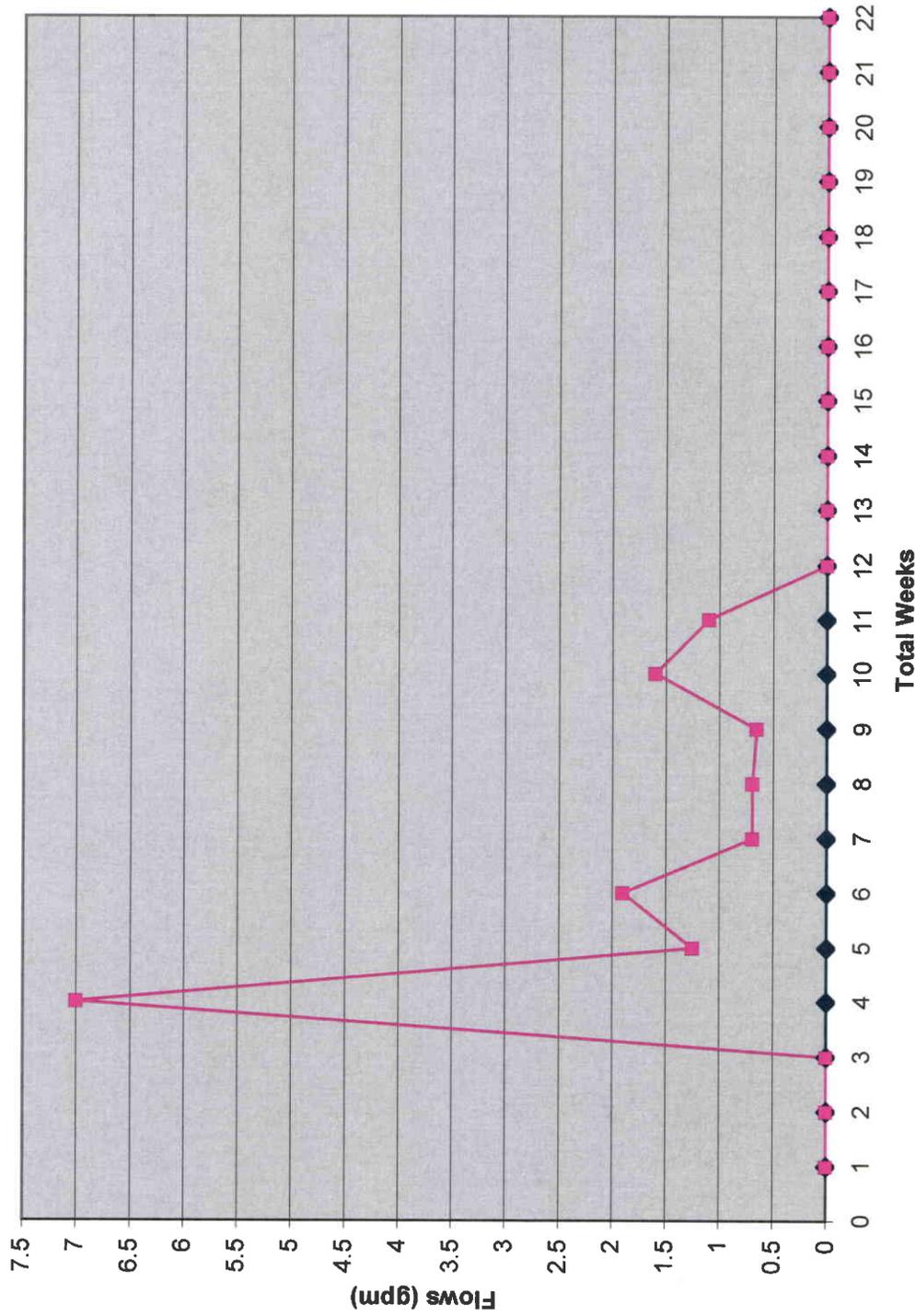


April 1 - August 31
 NOA- April 1 thru June 5, 2011

Soldier Canyon 10 Dry Year vs. Wet Year

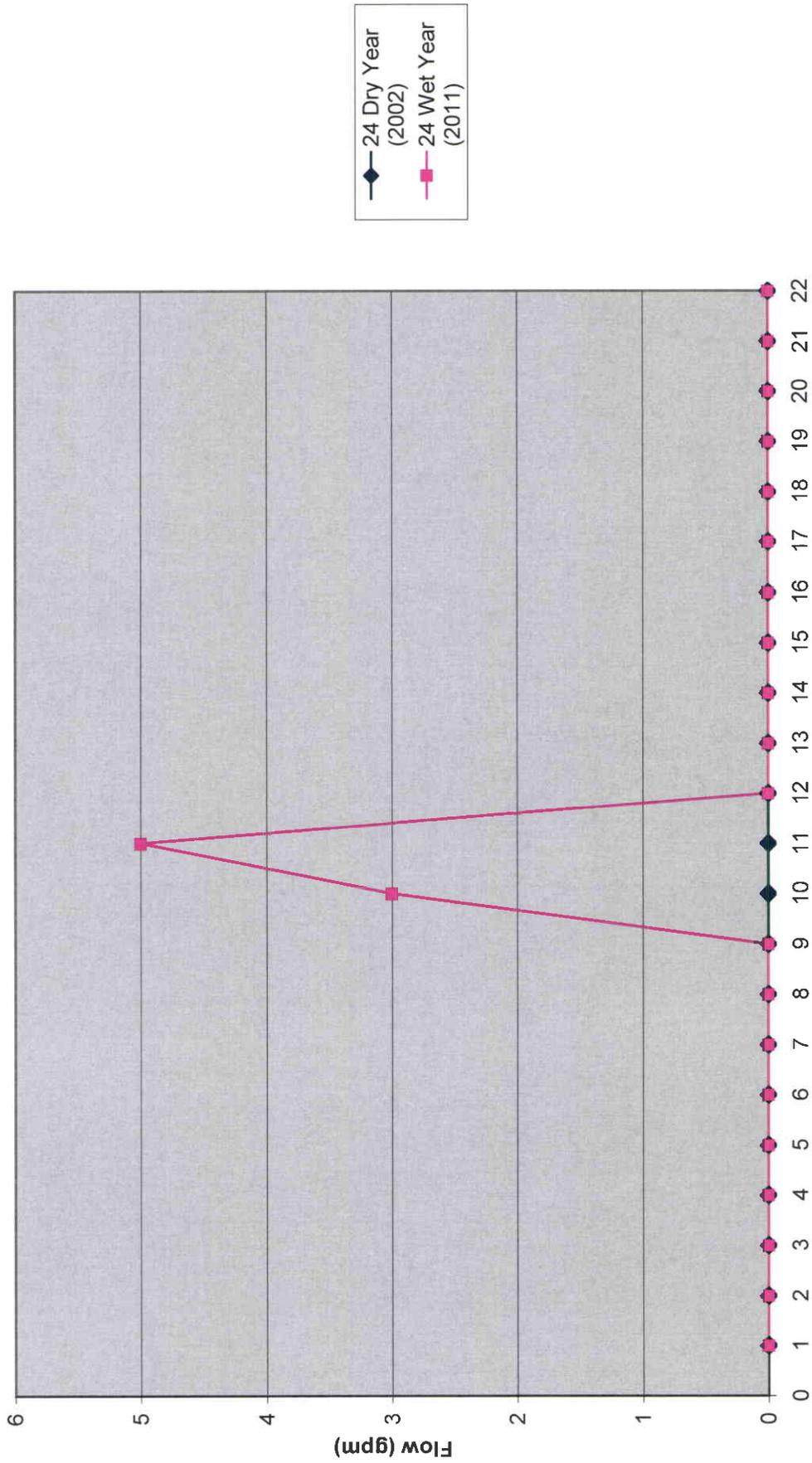


Soldier Canyon 23 Dry Year vs. Wet Year



Total Weeks
April 1 - August 31
NOA- April 1 thru April 24, 2011

Soldier Canyon 24 Dry Year vs. Wet Year



Total Weeks

April 1 - August 31
NOA - April 1 thru April 24, 2011

◆ 24 Dry Year (2002)
■ 24 Wet Year (2011)